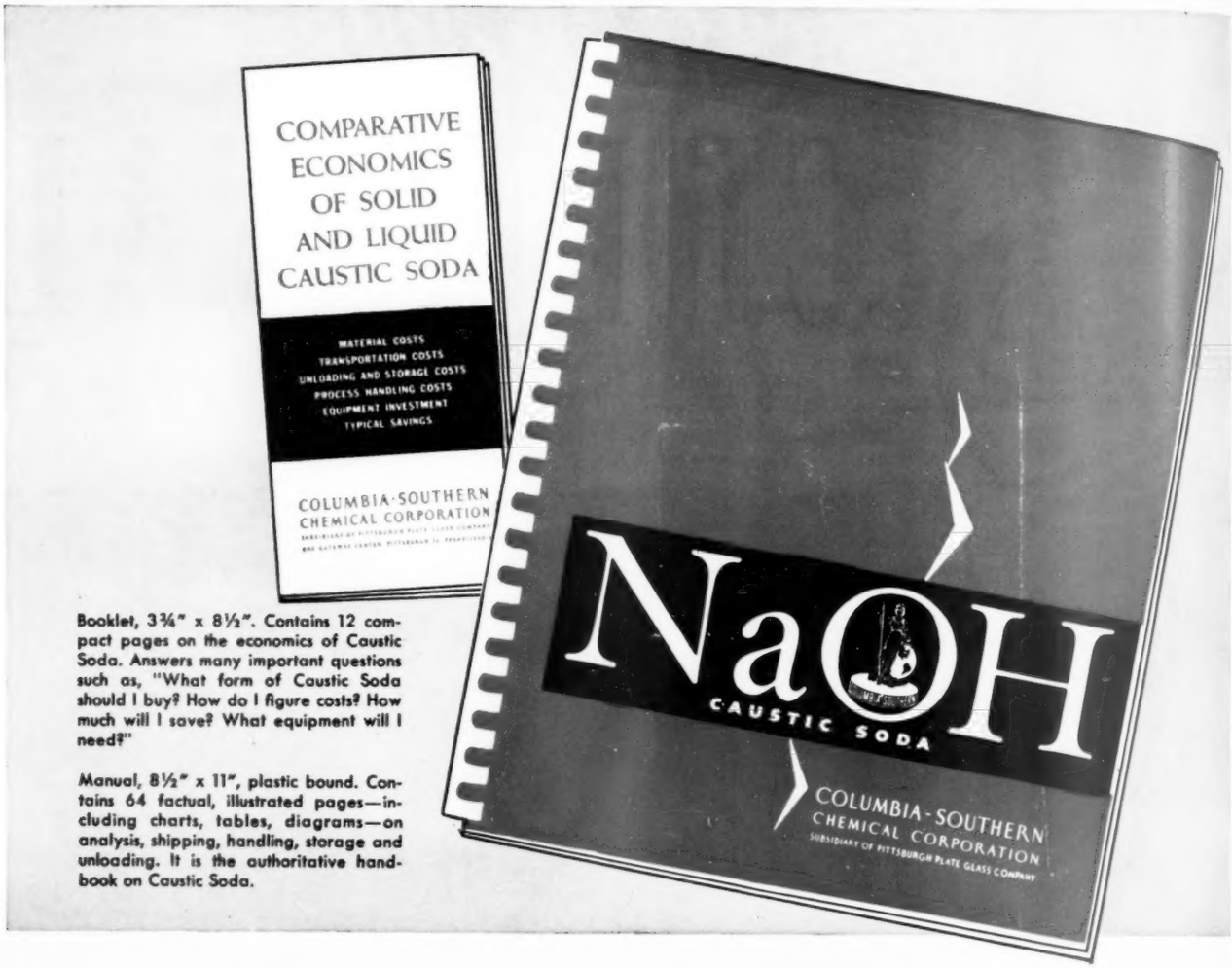
ARMED FORCES CHEMICAL JOURNAL

—U.S. Air Force photo

JANUARY-FEBRUARY 1957

IN THIS ISSUE: "Setting the Sights for Industry," the theme for A.F.C.A.'s 1957 annual meeting, Washington, D.C., May 22-23-24, with Air Force as Service Host.



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COVER PHOTO

This striking picture of military aircraft flying over the Capitol is a reminder to members that the 12th Annual Meeting of the Association will be held in Washington May 22-24, with the U. S. Air Force as host service.

JOURNAL CHANGES

With this issue, the Journal presents a new front cover design giving more prominence to the word "Chemical" in the title as the field of interest to which the magazine is especially devoted.

Members, no doubt, have already noted the separation of the masthead and index page from the listing of Association officers and provision of a separate page for that list to include the Chapters.

In the listing of the names of subeditors of the Journal, it is noted that those of Dr. Robert L. Fox and Mr. Daniel F. Reisenweber are, at their request, no longer included. The loss from our list is regretted. However, neither felt he could devote the time required for such an assignment. Our subeditors serve without compensation and it is realized that, from time to time, changes are inevitable.

INDEX

ADVERTISERS

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ARMED FORCES CHEMICAL ASSOCIATION

National Headquarters

408-410 Park Lane Building—2025 Eye Street, N.W.

WASHINGTON 6, D.C.

(Republic 7-6803)

The members of this Association, mindful of the vital importance to national defense of chemistry, allied sciences, and the arts derived from them, have joined together as a patriotic obligation to preserve the knowledge of, and interest in, national defense problems derived from wartime experience; to extend the knowledge of, and interest in, these problems; and to promote cooperative endeavor among its members, the Armed Services, and civilian organizations in applying science to the problems confronting the military services and other defense agencies, particularly, but not exclusively in fields related to chemical warfare. (From Art. II, AFCA Constitution.)

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LETTERS OF DEFENSE R & D CHIEFS ACCEPTING A. F. C. A. INVITATION REFLECT SERVICE INTEREST IN MEETING

(Vice President Johnson's invitation to the services to participate in the 1957 meeting of A.F.C.A., as exemplified by his letter to the Air Force, and the responses from all three of the armed services are printed herewith.)

December 4, 1956.

Lt. Gen. D. L. Putt, USAF
Deputy Chief of Staff, Development
Room 4E262, The Pentagon
Washington 25, D.C.

Dear General Putt:

This letter will formalize the request to Lt. Col. Sanford K. Moats, Civic Policies Branch of the Air Force, asking your Command to participate in the 12th Annual Meeting of the Armed Forces Chemical Association on May 22, 23, and 24, 1957.

The theme of our 12th Annual Meeting is "Setting the Sights for Industry." The United States Air Force this year is the host organization to the Association. The main meeting for May 22 and 23 will be at the Sheraton-Park Hotel in Washington. The classified meeting and display of classified hardware will be held at Andrews Air Force Base on Friday, May 24.

It is thought by the Association's Arrangements Committee that a program dealing with the desires and needs of the military beyond those products and items now in being will be of benefit to the military and also as a means of giving to private industry a goal for their own thinking in research and product development.

The meeting on May 22 will be devoted almost entirely to the Chemical Corps, U.S. Army, and our request for your Command to participate in the Thursday and Friday program is in addition to the Chemical Corps participation rather than through it.

A similar letter is going to the Commander of Research and Development of the U.S. Navy and to General Gavin of the Army and, of course, since this year it is the turn of the U.S. Air Force to be the host Service, General Twining has already accepted participation in our program. The coordination of displays and arrangements will be made through the office of Lt. Col. Sanford K. Moats, Civic Policies Branch, Office of Information Service, SAFS, Room 4C876, the Pentagon; telephone LIberty 5-6700, extension 7-2769.

We will greatly appreciate your acceptance of and participation in our efforts to develop a beneficial program for both the military and industry.

Respectfully yours,

OLIVER F. JOHNSON
Vice President
A.F.C.A.

5 December 1956.

Mr. Oliver W. Johnson
Vice President
Armed Forces Chemical Association
2025 Eye Street, N.W.
Washington 6, D.C.

Dear Mr. Johnson:

Thank you for your cordial letter of 4 December 1956, inviting participation by U.S. Air Force research and development personnel in the 12th Annual Meeting of the Armed Forces Chemical Association to be held on 22-23-24 May, 1957.

Your convention theme, "Setting the Sights for Industry" presents a welcome challenge to the Air Force, and an opportunity to present problems in the chemical field. There is no doubt that the program will be of direct and far reaching benefit to the military, the chemical industry, and the country as a whole.

I look forward to seeing you and the members of the organization in 1957, and send best wishes for an outstanding convention here in Washington, D.C.

Sincerely,

D. L. PUTT
Lieutenant General, USAF
Deputy Chief of Staff, Development
Department of the Air Force

December 4, 1956.

Mr. Oliver F. Johnson
Vice President, Armed Forces
Chemical Association
Suite 408, Park Lane Building
2025 Eye Street, N.W.
Washington 6, D.C.

Dear Mr. Johnson:

Thank you for your letter of 26 November, 1956. Personnel from my office, assisted as appropriate by personnel from the Office, Deputy Chief of Staff for Military Operations, will participate, as you request, in the 12th Annual Meeting of the Armed Forces Chemical Association on 23 and 24 May 1957. An unclassified presentation of approximately one hour duration will be planned for 23 May and a classified presentation of one and one half hours on 24 May. These presentations will treat the future concepts and requirements for the Army.

The display of classified Army equipment at Andrews Air Force Base on Friday, 24 May, will be planned and supervised by the Chemical Corps but will not be limited to equipment developed under the supervision of the Chemical Corps.

Lt. Colonel H. E. Sheppard, Room 3D 436, extension 75670, of my office, has been assigned the action to coordinate the Army Staff participation in your program. He will contact Lt. Colonel S. K. Moats direct to coordinate the detailed arrangements.

I consider this an excellent opportunity to acquaint a considerable body of prominent industrialists with some of our newer concepts and long range goals, and this is certainly appropriate to your theme of "Setting the Sights for Industry." I thank you for this invitation to participate.

Sincerely,

JAMES M. GAVIN
Lieutenant General, GS
Chief of Research and Development,
Department of the Army

Dec. 6 1956.

Mr. Oliver F. Johnson, V.P.
Armed Forces Chemical Association
Suite 408, Park Lane Building
2025 Eye Street, N.W.
Washington, D.C.

Dear Mr. Johnson:

I am pleased to accept your invitation for the Navy to take part in the 12th Annual Meeting of the Armed Forces Chemical Association, May 22-24, 1957, as requested in your letter of November 28. Since the Air Force will be host service next year, we will submit our plans for participation to Lt. Col. Sanford K. Moats, USAF, as you suggest.

The theme of the 1957 meeting, "Setting the Sights for Industry," is certainly appropriate. The Navy's participating activities will bear in mind, during planning for the event, the need to stress the desires and requirements of the military services beyond those products and items presently in use.

Your program, I am sure, will be of tremendous benefit to both the military services and to industry.

Yours sincerely,

E. B. TAYLOR
Rear Admiral, U.S. Navy
Chief of Information
Department of the Navy

"SETTING THE SIGHTS FOR INDUSTRY"

12th Annual Meeting of A.F.C.A. with military research and development as its theme and the U.S. Air Force in the Role of Host Service, will be held in Washington, D.C., May 22-24: Supplemental classified program scheduled for the final day.

AIMS AND TRENDS in national defense research and development with an eye, not only to the immediate future, but also even to the distant realms of military dreams, mark the signposts for the 12th Annual Meeting of the Armed Forces Chemical Association. Around that theme it is planned to have a series of presentations from top R&D representatives of all three of the Armed Forces which will point up the slogan for the meeting, "Setting the Sights for Industry."

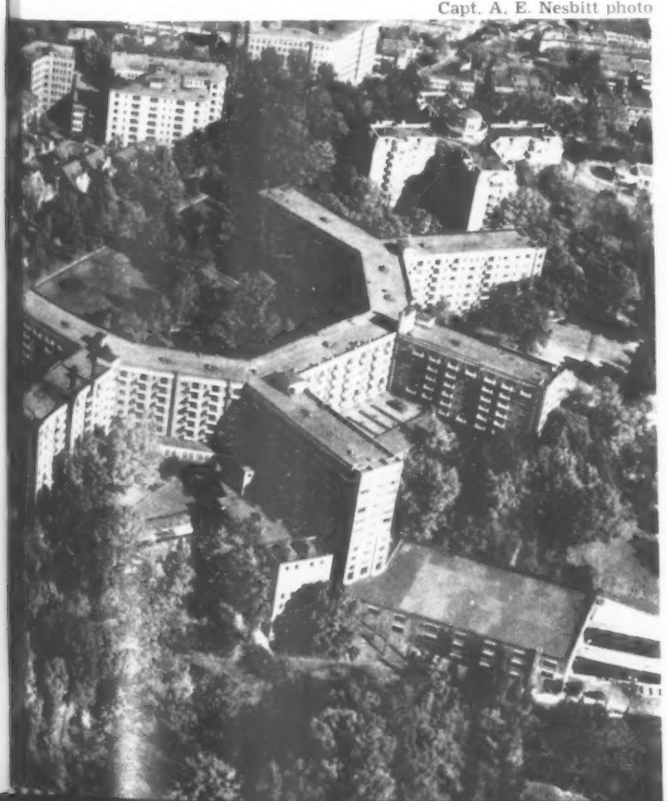
The gathering this year will be held on May 22, 23 and 24, in the Nation's Capital, with headquarters at the commodious Sheraton-Park Hotel, situated in the heart of Washington's northwest section.

As in the case of the 1954 meeting, which was also held in Washington, the United States Air Force will be the "service host." Air Force Chief of Staff, General Nathan F. Twining, in a letter accepting that role for the Air Force, said he recalled with pleasure the outstanding success of the 1954 meeting in Washington. He has designated Lt. Colonel Sanford K. Moats of his staff as Air Force project officer to assist in the arrangements.

Heading the Planning Committee for the program this year is Mr. Oliver F. Johnson, A.F.C.A. National Vice President for Meetings, who was elected to that office at the last annual meeting in Boston. Groups from the Washington and the nearby Baltimore and Army Chemical Center (Edgewood, Md.) Chapters will assist Mr. Johnson, along with Colonel Moats and representatives of other armed services.

AIRVIEW OF SHERATON-PARK HOTEL

Capt. A. E. Nesbitt photo



Mr. Johnson emphasizes that the primary purpose of the program being planned is to enable A.F.C.A. to assist the military services to make known to a broad segment of Industry their needs, in the development of materiel, for new achievements in the chemical and allied fields. Through such a program as now planned, he says, Industry can then "set its sights" and bring its own R&D facilities to bear more intelligently in support of the National Defense. He feels that if this meeting is a success—and it is fully expected to be—further such meetings arranged by A.F.C.A. will undoubtedly be held in the future.

NOTING THE DECIDEDLY far-reaching objectives of the program now being developed, the Committee Chairman also urges that as many as possible of the policy-making executives of A.F.C.A. member companies attend the meeting this year. Technical and scientific personnel of companies also certainly should attend, he says, but he feels it is especially desirable this year to have the executives.

The planning is already well advanced and participation of the services has been approved by top R&D chiefs.

An exceptional feature of the A.F.C.A. gathering this year will be a supplementary security-classified session with presentations there also from all three of the armed services. These discussions are envisioned as in extension or amplification of those given at the previous open, or unclassified sessions. The classified meeting, with a full day's program including the viewing of materiel displays, will be conducted on Friday, May 24, at Andrews Air Force Base, near Washington, after the conclusion of the unclassified meeting which will terminate with the annual banquet at the Sheraton-Park Hotel on Thursday evening, May 23. The Committee wishes to make it most emphatically clear to all members that the open meeting program being planned for this year will itself be very much worthwhile regardless of whether they attend the classified session on May 24.

The classified session is to be limited to persons who have a valid security clearance at the level of SECRET or above which has been verified for this meeting. In addition, those attending must either be members of the Association, or in the employ of a group or sustaining member company and be designated by their respective companies to attend this classified meeting. No limit is fixed as to the number of individual members or duly accredited member-company representatives who may attend the classified session.

The Committee urges all concerned who plan on attending the classified session to submit their requests for verifications of their security clearance to the security agency designated herein and *not to the Association*. This must be done before March 15. (See instructions in box herewith.) All persons who are cleared to attend the meeting will receive appropriate notices from the agency, and not from the Association.

CLEARANCE INSTRUCTIONS

Those persons coming to the 12th annual meeting of A.F.C.A. and who plan to attend the classified conference, which will be held at Andrews Air Force Base on Friday, May 24, the last day of the meeting, must have security clearances, meeting present Government standards for at least SECRET. All clearances must be verified before they can be accepted. *Requests for verification must reach the agency indicated below by 15 March 1957. No requests will be acted upon after that date.*

The following information will be required in order to verify the clearance:

Full name (not initials) of the member.
Date of Birth.
Place of Birth
Full name and address of facility where presently employed.
All information the member may have about his current clearance, including the degree of clearance, when granted, and the granting agency.

Each person planning to attend should send a letter containing the above information and stating that the individual desires to attend the classified meeting to—

Industrial Security Office,
Office, Chief Chemical Officer,
Army Chemical Center, Maryland.

Group and Sustaining members of the Association who are sending representatives to the meeting should supply the above information for both principal and alternate representatives in the event the principals cannot attend.

In discussing the military-industry relationship's aspect of the program now taking shape, Mr. Johnson states:

"There are things an Association can do that a private company or individual cannot do for themselves.

"Our program will deal largely in the area of research and development. The routines for acquiring already accomplished end products are well established. The channels are well-grooved and the remaining activity is basically routine. The technique for acquiring not yet developed products is certainly not routine. It is not well-grooved and herein lies the opportunity for each of our individual organizations to do something bigger and better for the defense of the country.

"A special feature of the 12th Annual Meeting will be a supplemental classified program restricted to those members in attendance who are already cleared by the military through a security level of secret. In this classified meeting, the various branches of the services will present ideas of the products not yet developed but which the planners feel should be developed. These ideas will cover broadly the whole phase of military requirements some of which will be applicable to one company, some to another.

"Some ideas discussed as dreams by the military will no doubt be revealed as already virtually completed projects of private industry through its own private research and development program. On the other hand, the Research and Development Commands daily have individual companies coming to them and offering what the individual firms believe to be 'brand new' developments but, in many instances, only to find, to their great disappointment, that the military have already explored completely the possibilities of such developments through their Research and Development Departments.

"The Association, as such, has nothing whatsoever to do with the issue of security clearances, or the need therefor, however, there is so much valuable help the membership of the Association who do have 'Secret' clearances can give to the R&D program of the military that your Committee feels a classified meeting of this nature is definitely in order."

THE SUGGESTION for holding a classified session in connection with the annual meeting was brought before the Board of Directors at their semi-annual meeting in Washington last October. The Board directed that the corporate members of the Association be canvassed as to their views about such a gathering and for indication of their willingness to send representatives to it, if such a meeting were held. The response to these inquiries was considered so encouraging that the Executive Committee, at its subsequent meeting in November, gave approval of the plan and authorized Mr. Johnson to proceed with the arrangements. Service agreement to the holding of such a meeting has already been indicated.

It is expected that the Chemical Corps of the Army will participate actively and have an extensive part in the program. The full afternoon of the first day of the meeting, May 22, has been earmarked for Chemical Corps presentations. It is planned that the Board of Directors will hold their annual meeting on the morning of the first day, that meeting to be followed before the adjournment for luncheon by the annual open meeting of the membership. A "get-together" cocktail party for the first evening is tentatively scheduled.

The second day will be devoted to the R&D presentations of the three services as already stated, with the annual banquet in the evening. Except for those members remaining for the classified session the following day, the banquet will conclude the annual meeting.

In view of the usual heavy demand for hotel accommodations in Washington, especially during the generally fine weather in the spring, A.C.F.A. members and guests planning to attend are urged to make early reservations for hotel space.

Guests at the Sheraton-Park have a special train service available to them—an attractive rubber tired affair called the "Cherry Blossom Special," which makes scheduled runs in the hotel grounds.

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NEW ENGLAND PLANS PROGRAM IN HONOR OF NATO

A two-day program of social and cultural activities, to be presented in Boston, March 23-24, honoring military representatives in this country of the North Atlantic Treaty Organization and their wives, is planned by a New England group, headed by Mr. Harry A. Wansker, a vice president of A.F.C.A., and president of the New England Chapter of the Association.

The program, Mr. Wansker states, is in furtherance of the provisions of Article II of the NATO treaty pertaining to economic and cultural matters. While the project is outside of Government, the plans have been coordinated with appropriate agencies of Defense and State Departments. In this connection, it is noteworthy that the U.S. Representative of NATO, Lt. General Leon Johnson, of the Air Force, is a brother of Mr. Oliver F. Johnson, an A.F.C.A. vice president.

New England Chapter of A.F.C.A., along with local chapters of a large number of other armed service, and civic, business and cultural associations, have either already enrolled in support of the project or have indicated the desire to do so.

To facilitate the administration and financing, the organizers have formed a non-profit corporation, under the title, The Boston Regional Conference of NATO Affairs, Inc., of which Mr. Wansker is President. He is also the General Chairman for the meetings.

The plans for this unique gathering are already fairly firm, including preparation of formal invitations. The program will open with a luncheon at the Harvard Faculty Club on March 23, with President Nathan M. Pusey, of Harvard University, as host.

In addition to the NATO group, to be coming from Washington, D.C., as the guests of the Corporation, the consuls of NATO countries in the Boston area and their wives, and also the commanders of major military, air and naval installations in the area and their wives are to be invited.

Following the luncheon, there is to be a military symposium at Saunders Theater on the Harvard University campus. Professor W. Barton Leach, Director of Defense Studies at Harvard, will be the Chairman, and, it is also learned that General Alfred M. Gruenther, who recently retired as Supreme Allied Commander in Europe, will be present and assist.

The symposium will be an open meeting, available to members of A.F.C.A. and other supporting groups who may wish to attend. Charges for attendance have not been determined. Press, radio and television coverage is planned.

The evening portion of the program is under the general chairmanship of Dr. Max F. Millikan, head of the International Studies program at Massachusetts Institute of Technology. There is to be a cocktail party and reception, followed by a banquet at the Sheraton-Plaza Hotel. Mr. Wansker will be the presiding officer and the master of ceremonies will be Brig. General Robert Cutler. Each of the NATO representatives present will have an opportunity to give a three-minute talk dealing with economic and cultural matters pertaining to his country.

The principal address at the banquet will be given by the Honorable Gordon Gray, Assistant Secretary of Defense for International Relations. The banquet, as in the case of the symposium, will be open to attendance by members of participating organizations.

On Sunday, March 24, the NATO guests, consuls and their wives, the Governor, Senators and Congressmen of Massachusetts, and the Mayor of Boston are to be invited, by the Trustees, to a luncheon and viewing of the fine arts exhibitions at the Gardner Museum.

The afternoon program, under the chairmanship of Judge Haven Parker, of Cambridge, will provide a conducted tour of historic Boston.

Mr. Wansker states that the group in charge feel that if this program, the first of its kind, is the success it promises to be, similar programs in future years will be organized in other cities.

FOR NAVY RELIEF SOCIETY

—U.S. Navy photo

Admiral Snackenberg receiving donation check for Navy Relief Society from A.F.C.A. New England Chapter President Wansker. At left, Mr. Chenery Salmon, Chapter Treasurer.

In addition to the donation made to the National Headquarters of the Navy Relief Society by New England Chapter at the A.F.C.A. Annual Meeting in Boston last June, a separate donation of $500 to the Massachusetts Auxiliary of the Society was recently made by the Chapter. A gracious letter of acknowledgment was sent to Mr. Harry A. Wansker, Chapter President, by Rear Admiral John A. Snackenberg, U.S.N., Commandant First Naval District, who is president of the Massachusetts Auxiliary of the Society.

NEW ENGLAND CHAPTER DINNER

The New England Chapter entertained with a cocktail and dinner evening at University Club, Boston, on November 30. Dr. Harold Weber, of the faculty of Massachusetts Institute of Technology, was the principal speaker and gave a most interesting presentation under the title "The World 20 Years Hence."

Half of the dinner cost for members and their wives attending was defrayed by the Chapter treasury.

GENERAL JOHN M. EAGER

Brig. General John M. Eager, USA (ret.), 67, a member of Washington Chapter of A.F.C.A., died at Walter Reed Hospital in Washington on November 15, after a long illness.

General Eager, who had been a White House aide under Presidents Coolidge and Hoover, was born in Baltimore, Md., was graduated from Harvard College in 1912 and commissioned in the Army the year following. An artillery officer, he had served as editor of the Field Artillery Journal. He was Military Attache to Rome in 1920 to 1923, and Chief of Staff of the Fifth Service Command at Columbus, Ohio, from 1940 to 1943. During World War II, General Eager had command of about 100,000 Italian prisoners-of-war in this country. He retired in 1945.

Burial was at Arlington National Cemetery, November 19.

FORD H. McBERTY HEADS WILMINGTON CHAPTER

Mr. Ford H. McBerty, of the E. I. duPont de Nemours & Company, was elected President of the Wilmington Chapter at its fourth meeting of the year 1956 held on November 20 last. Other new officers elected were: Mr. H. T. Clark, Atlas Powder Co., first vice president; Mr. R. T. Hall, Hercules Powder Co., second vice president and Mr. W. W. Hess, duPont Company, secretary-treasurer.

Last year's president, Mr. A. L. Churchill, introduced Mr. Henry N. Marsh, of Hercules Powder Co., as the speaker of the evening. Mr. Marsh, who has returned to his company after a year and a half as Deputy Assistant Secretary of the Army, gave a highly interesting talk on the subject, "A Few Facts About Life in the Pentagon."

Mr. Churchill pointed out to members the desirability of having the Chapter get an early start this year on its nominations for A.F.C.A.'s $1,000 Science Teacher Award. The Chapter also indicated its desire to have an appropriate gift made to R.O.T.C. students who are winners of A.F.C.A. medals.

DEFENSE FILMS FOR PUBLIC USE

A catalogue of Armed Forces motion picture films, with separate listings under Army, Navy and Air Force headings, has recently been prepared by the Department of Defense. Full instructions as to how to obtain films for non-profit showing are contained in the catalogue copies of which are available to schools, colleges, religious, civil, industrial, and similar type organizations by writing to Dept. of Defense, Office of Public Information, Pictorial Branch, Room 2E-777, Washington, D.C.

GEN. ROTHSCHILD SPEAKS AT CLEVELAND MEETING

Cleveland Chapter held its annual banquet at the Hotel Cleveland on November 29 during the National Chemical Exposition in Cleveland's Public Hall, General J. H. Rothschild, Commanding the Research & Development Command of the Army Chemical Corps was the guest speaker. He spoke on Chemical Warfare in the atomic age.

PLASTICS ENGINEERS MEETINGS

The Society of Plastic Engineers, Inc., with National Executive Offices, Suite 116-18, 34 East Putnam Avenue, Greenwich, Connecticut, announces the following national and regional conferences:

Jan. 16, 17, 18, 1957—13th Annual National Tech. Conf., St. Louis, Otto Wulfert, Wagner Electric Corp., St. Louis 14, Mo., general chairman.

April 3, 1957, Regional Tech. Conf. (SPE), "Plastics for Building," New York.

June 14, 1957, Regional Tech. Conf. (SPE), "Plastics for Electronics," M.I.T., Cambridge, Mass., Ralph Mondano, Raytheon Mfg. Co., Inc., Foundry Avenue, Waltham, Mass., general chairman.

RAISE $7,000 FOR CHARITY

The Pine Bluff Arsenal Consolidated Charity Fund Drive, which began on 17 September 1956, ended on November 2 exceeding the goal of $7,000 established on the basis of the successful drive of the previous year.

Colonel Russell W. Dodds, Commanding Officer, has expressed his deep satisfaction in the successful completion of the drive.

MIDWEST CHAPTER X-RAYS THE RESERVE PROGRAM

Secretary of the Army Wilber M. Brucker greets Mr. W. D. Wilkinson (right), National Vice President Armed Forces Chemical Association and Mr. E. S. Binkerd, at the Pentagon, Washington, D. C.

—U.S. Army photo

By EVAN F. BINKERD, CHARLES C. LINDSAY, WILLIAM D. WILKINSON

WHEN CONGRESS passed the Reserve Forces Act of 1955, it created an instrument which allows every facet of the American way of life to serve this country. The Act extends the opportunity for the youth of this Nation to consummate their American heritage of military service through well-planned programs. The Act conserves the greatest natural resource this Nation has—Manpower—as it provides that resource on a divided basis not only to the armed services, but to Commerce, Industry, and the professions.

The Act creates a challenge to the school, the home, the community, and the employer to serve actively shoulder to shoulder with the reservist—thus rededicating themselves to the patriotic spirit of our forefathers.

The day our young men are no longer proud to serve their country will mark the end of the United States, as we know it. It should become the solemn pledged duty of every American citizen to see that our boys are proud to wear the uniform of our armed services.

The Reserve Forces Act of 1955 changes and amends two earlier laws, The Universal Military Training and Service Act of 1951 and The Armed Forces Act of 1952.

RFA55 makes improvements in four different respects in the Reserve program. *One,* it enlarges the size of the Reserve and clarifies the Reserve structure. *Two,* it establishes a clear obligation to train as a reservist, and provides the means of insuring that reservists comply with their training obligation. *Three,* it provides ways for young men to enlist and train specifically for the Reserve components. *Four,* it creates a shorter total military obligation for persons entering the Service after enactment of the law.

The Act provides that after August 9, 1955, a man may select from five choices the method of fulfilling his military obligation in the way best suited to his individual career plans. The method which has been most widely chosen by young men is the one where he enlists prior to age 18½ years in a unit of the Reserve for a period of eight years. He will have six months of active training

This article is essentially the report of Midwest Chapter's Task Force for investigation of the working of the Armed Forces Reserve Act of 1955 headed by Mr. W. D. Wilkinson. The article condenses somewhat the discussions of various aspects of the reserve program but contains in full the Task Force recommendations. Submitted to the various top level Defense Department agencies, the report was reviewed in detail by the Department of the Army which concurred in most all of the recommendations. Letters of appreciation of the work of the Committee were sent to Mr. Wilkinson by Hon. Carter L. Burgess, Assistant Secretary of Defense; Hon. Thomas S. Gates, Jr., Under Secretary of the Navy; Hon. David S. Smith, Assistant Secretary of the Air Force, and Major General William M. Creasy, Chief Chemical Officer, Department of the Army. The report was submitted to the Board of Directors of A.F.C.A. at its semi-annual meeting in Washington, D.C., in October and was referred by the Board to the Executive Committee. The three authors of the article are all members of the Task Force and residents of Chicago. Mr. Binkerd is President of the Midwest Chapter, Mr. Lindsay is the Reverend Mr. Lindsay, and Mr. Wilkinson is a vice president of A.F.C.A.—Ed.

and serve the balance of his enlistment in the Ready Reserve by attending weekly drills and summer camps.

This study of the Reserve Forces Act of 1955 was brought about as a result of a letter from Under Secretary of the Army, the Hon. Charles Finucane, to the Armed Forces Chemical Association, asking this Association's reaction to the Act.*

A national officer, William D. Wilkinson, was selected to head a Task Force to study the Act. This Task Force was formed from men of the Midwest Chapter of A.F.C.A. with whom Mr. Wilkinson had previously worked on such projects. This group has a long and successful record of surveys for the Defense Department, and they set out to obtain by personal contact the information Mr. Finucane desired.

In the early stages of their work, they soon realized that their scope of contacts covered not only the Army, but the Navy and Marine Corps, and the Air Force. The Association quite naturally has a strong relationship with the Chemical Corps, which, broadly speaking, is the Chemical Corps for all branches of the Service, and in that light the Task Force chose to submit this report covering all branches of the Department of Defense.

The personnel of the Task Force took every advantage to contact and talk with members of the armed services and civilians, so that this report covers a wide expanse of contacts within the United States. They talked with a minimum of 3,500 people, and travelled better than 12,000 miles. The material contained in the report covers the observations and reactions of persons concerned with, or interested in, the Reserve Act. Also, the report makes recommendations for the more successful working of the Act.

There are subjects covered in the report which do not pertain directly to RFA55, but since they affect the overall smooth working of the departments of the armed services, it was thought that they should be included in this report.

Much has been said about the Reserve Forces Act in the fields of patriotism, training, and responsibilities. The Task Force made it their mission to determine what will make the Act work, and to study the problems with which the Defense Department is faced in seeking to make the program successful.

REACTIONS OF PRE-SERVICE YOUTH TO THE RESERVE PROGRAM

One of the key figures in the RFA55 program is the youth who is approaching, or is at, the age when military service becomes a problem he must face for the first time. What he thinks and feels about the problem is largely the result of his own environment. Upon what he thinks and feels, and even more important, upon how he acts, will depend the success or failure of RFA55. A considerable number of pre-service youths were polled for their reactions.

Many have been influenced by the reduction in draft calls. They see their chance of being drafted as small, and prefer to take the gamble. Despite the efforts of recruiting agencies, as well as the availability of public information, few are interested in getting the facts.

For boys with college plans, six months of military service would throw them out of step with their friends. Those with scholarships may find that acceptance requires matriculation directly out of high school, ruling out a six months training program. If plans for college require summer work to meet expenses, the boy will find he has been set back a full year, since it would probably be necessary for him to work for a time after completion of the six months of training.

To many, Commerce and Industry are apathetic about the Reserve aspects of the program. This, they feel, limits their vocational opportunities since they will be available for recall to military duty. Some, too, expressed the belief that Reserve obligations would interfere with company programs. Many doubt that Service training in a technical field is accepted by Commerce and Industry. Likewise, the belief that previous training will not be used by the armed services is common.

Ambitious boys with above average intelligence doubt that the services can offer a six months training program challenging enough to hold their interest. Further doubt is expressed in the ability of the service to train adequately in six months, and for this reason a full enlistment may seem more desirable.

Public reaction to enlisted personnel has caused many to feel that being an enlisted man in the service has a social stigma. Another consideration is that frequently a youth does not like to be asked to assume an obligation which could result in his death without the privilege of expressing his opinion at the polls.

With these reactions and observations in mind, the Task Force made the following recommendations as to ways to enlighten the pre-service youth and clarify their thinking on the Reserve program:

1. School systems, public, parochial and private, should make time, facilities, and rosters of boys eligible for service available to representatives of the armed services, in order that the boy can be fully informed of the various programs available to him.

2. The P.T.A. and other school groups, as well as youth centers, should cooperate with representatives of the armed services so that the parents are equally as well-informed as the boys. A national committee of these agencies should be formed to work with the Department of Defense in order that their work will be organized on a national basis.

3. The recruiting agents should contact both the boy and his parents, and analyze the personal situation, and recommend one of the programs under the Reserve Act which is best suited for that individual case.

4. Universities and colleges should require as a prerequisite for scholarship, a definite commitment on the part of a scholar for the discharging of his military duty. It is recommended that a task force of representatives from the Association of American Universities which deals with college presidents only, and the Association of Graduate Schools which deals with deans of colleges and universities, and also the College Scholarship Association at Princeton, New Jersey, be set up to establish a prerequisite covering military training commitments.[1]

5. Personnel offices of Industry and Commerce should make it mandatory that an applicant for a job satisfy them regarding his draft status. This could be done through the National Association of Manufacturers and the Chamber of Commerce of the United States.

6. The school systems should offer the boys and girls of this Nation a more enthusiastic course in Americanism, so that there is a greater willingness to serve their country. This will also promote a more complete knowledge of our American heritage in the future fathers and mothers of the Nation.

RELIGIOUS ASPECT—PRE-INDUCTION TRAINING THROUGH CHURCHES

Believing that, under God, all men are created free, and that at certain times in history it is necessary for men to rise to the defense of freedom; and believing that, while Church and State should remain organically separate, the Church has a responsibility for men in

* This correspondence was published in the March-April 1956 issue of the Journal.

[1] The Dept. of the Army in its review did not concur in this comment, stating that "it is believed that educators would be strongly opposed to such a practice as an infringement on their prerogatives."

their total lives, the Task Force conceived the idea of enlisting the aid of Churches of all faiths in preparing tools and materials which will strengthen men in their defense of freedom.

It was recommended that a high level policy committee be formed to develop a unified church program on education to be submitted to the national organizations of all faiths for their voluntary use. This program committee should appoint a strategy committee which, working in conjunction with churches of all faiths, would prepare material for use in local congregations to implement the policies formulated and develop working programs to inculcate in the young men concerned the spiritual and moral principles consistent with their respective faiths, explain the reasons for the Armed Forces Reserve and reveal the opportunities, training and activities to be found in the Reserve Program.

The Task Force envisioned regular classes of instruction as a part of the total religious education program of the local congregation. The Church instruction classes should be taught by qualified laymen, the ministers having a cooperating part. Preferably, the lay teachers should be men with military experience, combat if possible, selected by the local congregation in consultation with local or area headquarters or training committee. The local headquarters or training committee should not be drawn from the local draft board or veterans' organizations.

Such pre-induction training is aimed directly at accomplishing the following:

1—Answering questions now in the minds of the majority of young men under induction age.

2—Preparing them to become cooperative with the training each will receive subsequent to induction.

3—Giving them spiritual, moral and patriotic bases for their period of service in the Armed Forces.

4—Helping to make their induction more acceptable to their parents and friends.

5—Enabling and encouraging the local Church to maintain close relationship with each young man during his service and assisting the Church to help the young man when he returns to the community.

6—Establishing and maintaining closer ties between the local congregation and the Chaplains Corps.

7—Inculcating in the young men those ideals that would better fit them for service in the Armed Forces.

OBSERVATIONS AND REACTIONS TO SIX MONTHS ACTIVE DUTY TRAINING

The six months active duty training phase of RFA55 was observed first hand by the Task Force in a visit to Fort Leonard Wood, Missouri.

Reserve trainees were found to be genuinely enthusiastic about the training sessions observed. They understood and appreciated the training they were receiving. They like being treated as men, supervised and guided with understanding, and not pampered or coddled. For many, it is the first time away from home and the planned life and new experiences are thoroughly enjoyed. The trainee feels the program teaches him discipline and subjects he could not get in civilian life. Those who plan to attend college appreciate the opportunity to learn to live with other people and to regulate their lives and habits into a large program such as college will demand.

Neat and well-qualified non-commissioned officers conducted the major part of the training. The high calibre of instructors is appreciated by the trainees. The efforts to bring out the shy type of trainee is most commendable.

The program and facilities for parents to visit trainees are excellent. Parents are pleasantly surprised at the calibre of training. Their sons have not become morally contaminated, and in this regard, the character guidance course under direction of the Chaplains is most commendable and is liked by the trainees. Parents also appreciate the specialist training as it acquaints the boy with a trade or skill before entering civilian life. The trainees, too, are enthusiastic about specialist training and most are anxious to join reserve units to utilize this training.

While the need for new buildings was quite obvious, the use of present buildings is commendable. Both housing and mess facilities were excellent.

In the face of the enthusiastic reception of this phase of the Reserve program, the Task Force found little to recommend, except for the four following items geared to further, rather than change, an otherwise well-planned program:

1. The literature on the six months active duty for training, and 7½ years of Ready Reserve should include a list of the specialist training programs available to the men, detailed descriptions of the six months training received, the fact that aptitude tests are given the men, the fact that there is a vocational guidance program, and that they are given moral training, and have the opportunity to pursue their hobbies and that extra-curricular programs are available.

2. The first groups of trainees under the six months' plan are now filtering into their reserve units and are very enthusiastic. To retain this enthusiasm, the armed services will have to see that their training is utilized and further developed. If for some reason a man's training cannot be used immediately, he should be acquainted with this fact and a program outlined to him of when it will be used.

3. The reservist, upon arrival at a reception center, has preconceived ideas of the services which he has learned from those who have been in the services, or stories passed on to him by civilians. It is of extreme importance that reception centers process the trainee with the least amount of confusion, and always keep the reservist informed of the processing program that he is going through. Literature and other material given the reservist should be pointed towards the reserve program, and it must be realized that much of this material will eventually get into the hands of the folks at home. They will judge the services on the context of such material.

4. Let the parents of the boy know of the vocational guidance, the character building program, and the physical development training planned for their boy. The average parent thinks his boy is only going to learn to drill, do K-P duty, and undergo rigorous physical training programs.

READY RESERVE TRAINING

The success of RFA55 will depend entirely upon the training program.

In all branches of service across the United States, too frequently, reservists criticized the two-hour drill period as being wasted time, owing to poor training programs. This criticism usually originated in the company units.

The continued use of the same equipment does not build for an enthusiastic program. The facilities for the Reserve Program are not adequate in respect to buildings, training areas, and classrooms, and this has a direct effect on the morale of the reservist.

The quality and spirit of the majority of instructors is very high and they are looking to Plans and Training Sections for help.

Recognizing the extreme importance of this phase of the Reserve program, the Task Force has made the following recommendations:

1. To assist the company level in training, special teams from top and middle echelons should put on training programs at the various reserve units. In this manner high standards of training could be established, giving the unit instructor a goal to shoot for.

2. The lack of facilities for training should be brought out quite forcibly to Congress in order that proper appropriations for armories can be set up so that a more efficient Reserve Program can be carried out, in keeping with the intent of the law which Congress has passed.

3. Rotation of physical equipment and training aids should be provided in order to assist the instructors in their training programs.

4. It is further recommended that proficiency citations be awarded to Reserve units at the company, battalion, regimental, and division levels. Such awards could be streamers that the units would proudly display on their unit designation staffs. The merit of this is that the Defense Department would be recognizing the efforts of the units and the establishment of a competitive spirit to earn the citation.

5. The constant problem in the summer training program is that the individual in many cases must take his summer vacation for active duty with his unit, which results in no vacation for his family. This has created some problems within the home. It is our recommendation that some thought be given to providing facilities at summer camps for the families of personnel who have qualified on a competitive basis for that privilege. This would not only solve a problem, but would create a competitive action amongst the personnel and also these families when returning to their communities would be star salesmen for that branch of service.[2]

6. The problem of inducing industry to cooperate in allowing two additional weeks for military training is primarily one of selling Industry and Commerce on the quality of the program.

7. The success of any Reserve unit will depend upon the attitudes and spirit of the top commanders of that unit. An example to be studied would be the 85th Infantry Division in Chicago, where the enthusiastic, competent leadership and devotion of its top officer filters down to the private in all units. There is a reflection of this spirit in its tra'n'ng programs and in its increasing rate of enlistments.

8. A study should be made of the idea of using permanent installations for the two weeks' active duty program, rather than the present method of readying temporary summer facilities for this duty. This would permit the establishment of permanent training centers, and also afford a storage point for the unit's equipment which cannot be housed in armories. There would be a saving in the cost of readying and closing summer camp facilities. New buildings badly needed on permanent installations could be built, and the present ones used for summer training.

9. During the specialist and unit training period, which is approximately the last sixteen weeks of the six months training period, the man should be offered pre-college training in given courses during off duty hours.

[2]The Department in its review did not concur in this recommendation and indicated doubt of the feasibility of providing living accommodations at summer Reserve training camps for families.

THE FACET OF RACIAL INTEGRATION

In our visits with colored officers and enlisted personnel who contributed quite freely their opinions on this subject, it is our belief that their thinking should be presented. These men feel very strongly that the decision of the Supreme Court makes it a matter of law that they have equal rights, privileges, and responsibilities with the white personnel.

RFA55 represents a great opportunity for the development of common understanding between races, for here these men are working in a common atmosphere and in a common cause, and through this they can learn to understand one another and carry this understanding forward into civilian life.

The Task Force, in talking to colored personnel, observed that they strongly feel that they have to be above average in order to compete with white personnel. They feel that in the main their assignments to certain branches of service are for "tote dat load" type duty only.

(Continued on page 30)

TABLET HONORING CHEMICAL MORTAR MEN WHO FELL SERVING WITH FIRST ARMY UNVEILED

By **MAJOR JOHN F. CARROLL, Cml. Corps Res.**

Mobilization Detachment No. 10

THE OFFICERS and men of the Chemical Mortar battalions who died while serving in combat with the First Army in Europe during World War II were recently honored on Governor's Island.* In their memory a large commemorative tablet was presented on October 3 last to the First Army by the New York chapter of the Armed Forces Chemical Association.

Prime movers in the origination of this tribute were Mr. Si Askin, past-president of the chapter; Mr. W. Ward Jackson, present president and Colonel Theodore H. Gahan, Chemical Officer of the First Army.

The chapter agreed to furnish the plaque if the Army would supply the mounting. Colonel Gahan and his deputy, Colonel William C. Hammond, Jr., with the help of the Corps of Engineers, located and transported to Wheeler Road a large boulder which serves as the mount. Suitably surmounted by miniature 4.2 mortars and the crossed retorts and benzene ring of the Corps, is the following inscription cut deep in solid bronze to withstand the passing of the years:

IN MEMORY OF
THE OFFICERS AND ENLISTED MEN
WITH CHEMICAL MORTAR BATTALIONS
WHO GAVE THEIR LIVES FOR
AMERICAN FREEDOM WHILE SERVING WITH
THE FIRST ARMY OF THE UNITED STATES
DURING WORLD WAR II
DEDICATED BY
NEW YORK CHAPTER
ARMED FORCES CHEMICAL ASSOCIATION
OCTOBER 3, 1956

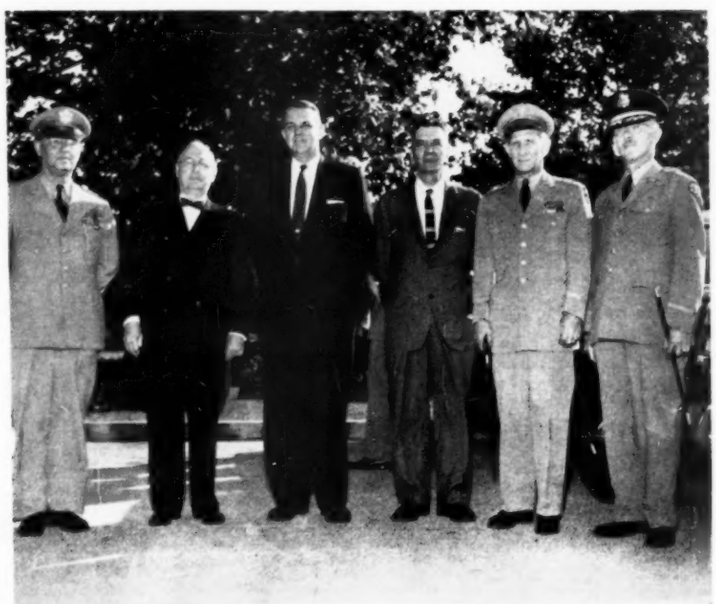
*Governor's Island in New York harbor is the location of Headquarters, First Army and also the Army post, Fort Jay.

Among the Chemical Mortar battalions assigned, during World War II, to the First Army were the 81st commanded by Col. Thomas H. James and Lt. Col. Jack W. Lipphardt; the 86th commanded by Lt. Col. Wesley B. Hamilton; the 87th commanded by Lt. Col. James H. Batte; the 90th commanded by Lt. Col. Edgar Van Houten Bell; the 92nd commanded by Lt. Col. Ronald L. Martin and the 95th under command of Lt. Col. Earl L. Shepherd. The retired wartime Colors of all these Units were obtained for the occasion by the First Army Chemical Office from the Quartermaster Depot in Philadelphia.

Wednesday afternoon, October 3rd, was a perfect example of Indian summer, as some five hundred members of the New York chapter, Chemical Corps Reservists and friends crossed by ferry from lower Manhattan Island to Governor's Island. The Army spared no small detail in order to make this a memorable occasion. A flag-draped speakers' platform was erected. The famous First Army band in their new dress blue uniform played some of their martial selections before Chaplain (Lt. Col.) William M. Frost of Headquarters First Army delivered the invocation.

The principal address of the afternoon was given by the wartime Chief of the Chemical Warfare Service, Maj. Gen. William N. Porter (Ret.). Those of us who

(Continued on page 39)



Left to right: Maj. General G. B. Barth, USA, Deputy Commanding General, First Army; Maj. Gen. General William N. Porter, USA-Ret., former Chief of Chemical Corps; Mr. W. Ward Jackson, President, New York Chapter of Armed Forces Chemical Assn.; Col. Thomas H. James, USA-Ret., former CO 81st Cml. Mortar Bn.; Maj. General R. H. Booth, USA, Chief of Staff, First Army; Brig. General William R. Currie, USA, Asst. Chief Chemical Officer for Doctrine and Plans.

TOXICOLOGICAL WARFARE

(Brigadier General J. H. Rothschild, Commanding General Research & Development Command, Army Chemical Corps, discusses CBR field in an address, excerpts from which are presented below, to the annual dinner meeting of New York Chapter of A.F.C.A., in New York City on November 5, 1956.)

. . . THE INTENTION of the United States in international affairs is the deterrence of war. All three services of the Department of Defense, the Army, Navy, and Air Force, are bending their maximum efforts toward the development of weapons systems and organizations which will make any enemy hesitate a long time before he will initiate a war and, of course, which will win a war should he initiate one. Obviously, all major powers are engaged in developing all major means of warfare, offensive and defensive. These major means include the high explosive system, the nuclear system, and the toxicological system. Historically, the high explosive, or older system, has not succeeded in deterring wars, but nuclear and toxicological systems have sufficient promise of success for this purpose for them to be seriously considered.

However, for any weapon to act as a deterrent to war, knowledge of the weapon and its potentiality, and the fact that we possess it, must be known to the enemy. Furthermore, acceptance of, and familiarity with the system on the part of our people is a prerequisite. . . .

The toxicological weapon systems include chemical, biological, and radiological warfare, commonly known as CBR warfare. These are the responsibility of the Chemical Corps. . . .

The toxicological warfare weapons systems have one common attribute—they do not cause, in themselves, destruction of facilities, but instead attack directly the people who operate those facilities. This uses what is called the "minimum destruction" approach, as other weapons systems destroy both human life and facilities. The value of this method is quite apparent. . . .

Of the three fields included in the toxicological, or CBR fields, chemical warfare is the one probably most familiar to all of you. It consists of the use of chemical compounds to break the enemy's will to resist. The compounds can be introduced into the body through the lungs, by breaking the skin and getting the chemical in, or by having it pass through the skin. All of these methods are quite feasible. In addition, the use of chemical compounds allows a great deal of flexibility in selecting an agent which will kill, or merely incapacitate temporarily.

As any thinking person would realize, we are developing both offensive and defensive systems. If we are to be prepared in the field, and I believe we agreed a short time ago that all major powers must be prepared in all major means of warfare, we must develop the weapons systems to the maximum extent possible consistent with the funds provided. Furthermore, attempting to develop the defensive system without any thought about the offensive side, would be like developing a defensive football team without ever allowing them to work out against an opposing team. You'd end up with a mighty weak defense. Nothing would invite toxicological warfare faster than an inability to protect ourselves.

—U.S. Army photo

General Rothschild and President Jackson of New York Chapter at New York dinner meeting.

OUR PROTECTIVE system must be a common one, where possible, against all means of toxicological warfare. . . . The basic item of the protective system against CBR weapons is the mask, and then also included are things like protective shelters, protective clothing, methods and means for treating casualties, methods of detection, etc.

The next toxicological field of the CBR group is that of biological warfare. . . . Biological warfare is the intentional use of living microorganisms or their toxic products for the purpose of destroying or reducing the military effectiveness of an aggressor. He might also be deterred by the threat of damage to his food crops and domestic animals. Here again, agents which kill or incapacitate may be selected by an aggressor. . . .

In this field we are on different ground than with the chemical agents. With chemical agents, an enemy would have the entire realm of possible chemicals within which to operate. . . . When we start talking about living organisms, the story is different. The chances of synthesizing a new, virulent organism are certainly remote at this time. An aggressor would be limited to organisms, . . . which are already known.

In using biological warfare, it would not be possible for an enemy to plan on an epidemic. An epidemic is the result of a complex set of conditions which are not thoroughly understood. The causative organism of the disease is only a part of the conditions necessary for the epidemic. Basically, the disease organism would be spread by means of aerosol clouds, that is, clouds of the organisms which float in the air over the target area,

and the portal of entry would be the respiratory tract. Therefore, dependence would be placed on direct infection rather than infection transmitted from person to person.

This direct infection into the lungs brings up a problem for the defense. Many organisms are more effective through the respiratory route than through their natural portal of entry. Furthermore, the disease might be more difficult to recognize so it can be treated. For example, typhus is normally caused by means of a louse bite, and yellow fever by means of a mosquito bite, whereas the course of the disease may be different when an inhaled aerosol causes the disease. . . .

As I mentioned before, our protective systems are common against all means of toxicological warfare where possible. Biological warfare stresses the value of vaccinations, but it is dangerous to depend too greatly on them. Logistically, it is impossible to develop vaccines against all the diseases which might be used as BW agents and have them in the right places at the right times. Furthermore, there is no solid immunity against many agents, particularly when the disease results from the relatively massive attack against the individual which would be used under biological warfare conditions rather than under the conditions usually encountered in nature.

BEFORE LEAVING the biological warfare field, let me mention the biological attack against crops and animals, that is, antifood warfare. While the United States is in the relatively unusual position of normally having food surpluses, most countries have a problem with shortages of food. Food warfare—the blockading of countries, for example—has been used for centuries. Countries depending greatly on a single crop and which do not have food surpluses are quite vulnerable in defending against this form of attack. There is reason to believe that antifood biological warfare could play a decisive role in any war covering a period of time.

You have been reading recently about one of the aspects of the third of the CBR group, i.e., fallout from a hydrogen bomb as a means of radiological warfare. Radiological warfare is the attack on personnel by means of residual radioactivity. The residual radioactivity may be the result of the fallout from a nuclear weapon, or it may result from the use of radioactive material distributed by other means, such as by small bombs dropped from planes or missiles. With the latter system, there would be no attendant destruction of facilities.

On the defensive side of radiological warfare, some of the problems are common with defense against the other means of toxicological warfare, and some are peculiar to this field. We certainly must be prepared to delineate the area which is dangerous and protect people as far as possible who are in the area or must traverse it. Within limits, we can decontaminate facilities within the area. The Federal Civil Defense Administration is working hard on this problem within the United States.

Leaving the discussion of toxicological warfare as such for a moment, I'd like to mention one program we have under way in which some of you can be of great assistance to the Chemical Corps. This is the Industrial Liaison Program under which the Corps contacts industrial and academic laboratories for help in seeking new chemicals with physiological activity of possible military interest. We need widespread assistance to gain as much information as possible to give us leads on which to work. It is thoroughly understood that industrial laboratories will often not wish their private research information made public, even though they desire to cooperate fully with the Department of Defense. With this in mind, a system to safeguard this type of information, as foolproof as we can devise, has been set up. We will be glad to give you full information on the system. . . . As you probably know, many agents, including the German nerve gases, were identified through such a liaison system.

BEFORE CLOSING, I would like to present a few areas in which questions sometimes arise in reference to our work. It is probably unnecessary to discuss with this group the question of whether or not toxicological warfare is humane. No warfare is humane. . . . Certainly, a mangling of the body by blast and fragments is hardly humane; nor is the use of heat and fire. I personally would prefer to come out of a war whole, or not at all, than come out a fragment of a man. Furthermore, the use of toxic agents gives greater flexibility in that it is possible to use agents which incapacitate temporarily, as well as ones which kill and maim. . . .

Now for some of the other advantages an enemy might see in military operations. The various agents permit the covering of large areas to military advantage with a minimum of logistical effort, and this means less expenditure of material and industrial resources. In addition, their use also permits avoiding the destruction of important industrial complexes, and the subsequent rebuilding of these complexes through effort, or financial support.

The Armed Forces Chemical Association . . . can serve a valuable purpose in bringing to the public greater understanding of the toxicological warfare fields . . .

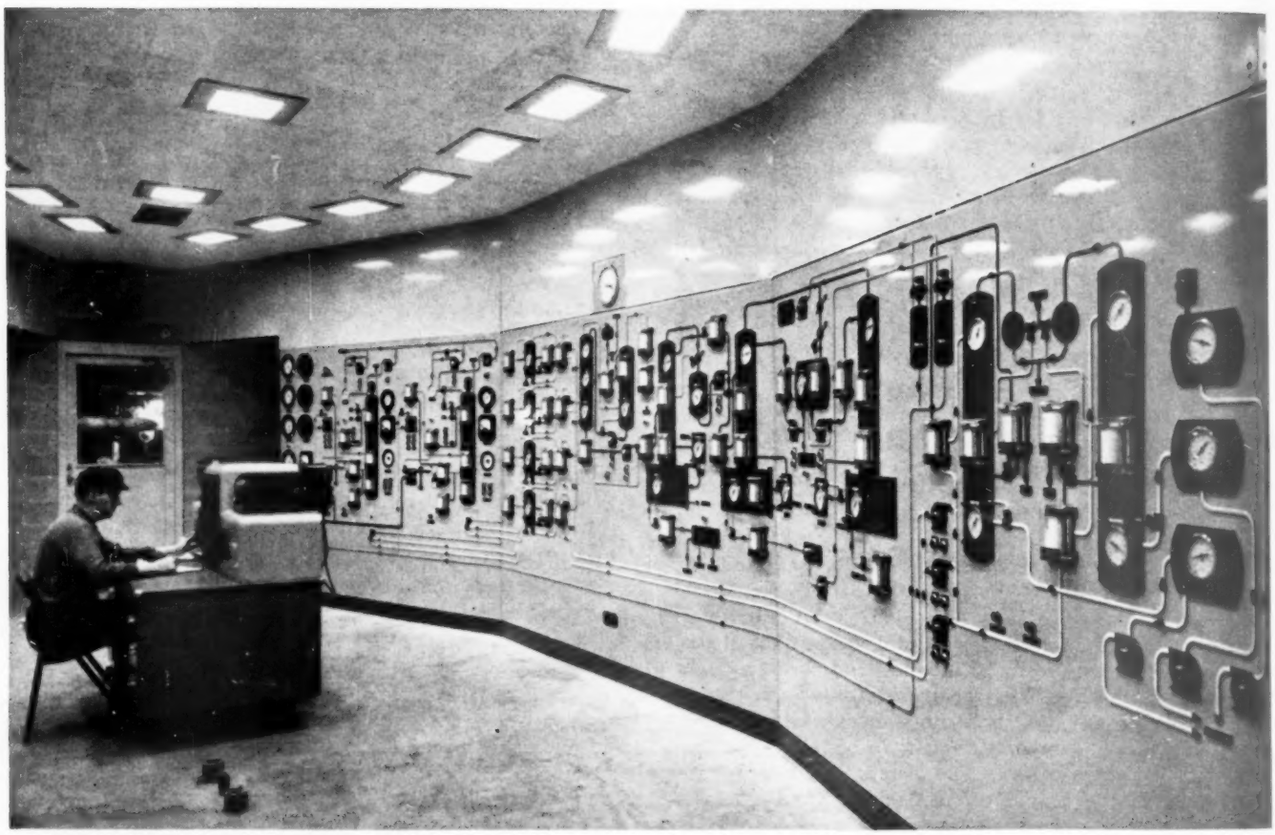
NEW YORK CHAPTER HAS RECORD DINNER

On Thursday night 15 November more than 400 chemical industrialists, Regular Army and Reserve officers from the New York, New Jersey and New England area thronged the main dining-room of the Hotel Delmonico, New York City. "One of the finest gatherings we ever held," commented Mr. W. Ward Jackson, President of the New York Chapter, and Vice President of Commercial Solvents Corp. "It is largely a tribute to the interest and attachment of many men in the Chemical industry to the service and accomplishments of the Chemical Corps. Credit for this superb turnout should also be given to Dick Eddy, of Carbide & Carbon, Chairman of Arrangements, as well as Colonel Hal Walmsley, of the New York Procurement Office, and Major Ralph Aldrich, Senior Unit Chemical Advisor for Reserve Affairs"—remarked Mr. Jackson before he introduced the banquet speaker, Brig. Gen. J. H. Rothschild.

ALLIED IN DEFENSE

By JAMES SHERIDAN

Treasurer, Allied Chemical & Dye Corporation



"CARDIOGRAPH" OF CHEMISTRY provides a running story of what is going on inside a labyrinth of piping and vessels. In Semet-Solvay's petrochemical works at Buffalo, N.Y., as in other Allied Chemical plants, these graphic control panels are used to check every step of otherwise sealed-in processes. Each control point is readily identifiable on the diagrammatic panel—even a slight variance from standard can usually be anticipated and counteracted before it has time to grow.

THE STORY of Allied Chemical & Dye Corporation extends back more than a century, to a day when chemistry played only an elementary role in defense. The products of antecedent companies covered a range of history, from roofing houses of the early West to supplying in many ways scientific foundations of the Industrial Revolution.

Today, Allied Chemical is a closely integrated organization geared to the production of more than 3,000 chemical products vitally needed by industry. Constantly developing its facilities to better serve the public, Allied has built a score of new plants since World War II and modernized and expanded existing ones. It operates more than 120 plants, mines and laboratories throughout the United States and Canada and employs approximately 30,000 people.

This is the eighth and concluding article of the current series on the origin, development and product fields of the sustaining member companies of the Armed Forces Chemical Association which reflect the vital role of chemical science and industry in the National Defense.—Ed.

The beginning of one of Allied's ancestor firms was a humble one. It came in Chicago, and the year was 1854. A young man named Samuel Barrett and a partner started manufacturing inexpensive roofing materials.

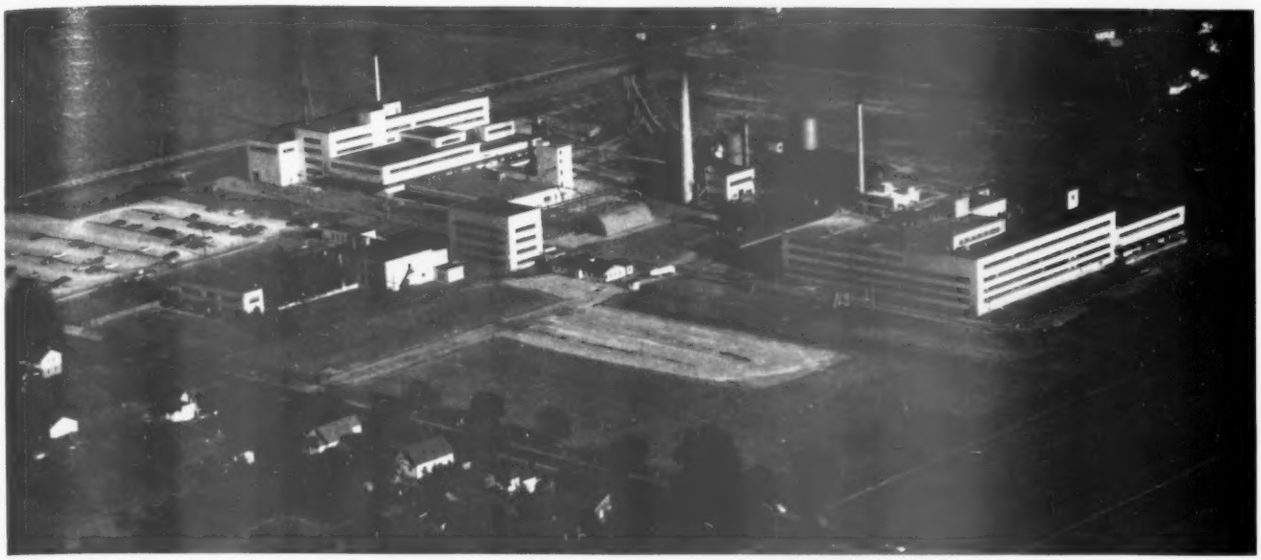
In the wake of the California gold rush, the westward migration was in high gear, creating a need for all sorts of building materials for the settlers' dwellings. A dry roof was all important—and that is exactly what Barrett provided.

He dipped muslin in hot tar discarded by the local gas company. The combination of tar and fabric made a wonderful waterproofing material which was economical and enduring.

Now the settlers had a real roof over their heads.

In 1871, the Chicago fire destroyed the factory. It was another case of the ill wind. The products from Barrett's hastily rebuilt company were in demand throughout the entire rebuilding South Side.

When an epidemic killed most of Chicago's horses in 1872, the next year, it seemed the fates had earmarked



THIS NEW TOLEDO, OHIO, PLANT of Allied Chemical's Barrett Division manufactures PLASKON resins and plastics, used in electrical parts, automobile fittings, radio and television cabinets, and similar essential everyday products. A modern example of industrial architecture, it accents both space and light.

Samuel Barrett for special torment. He could not obtain supplies of raw materials without transportation. Undaunted, he hired light express wagons and harnessed a dozen strong men to each. His contracts were carried out, with not a single missed delivery.

By 1896, ten companies had joined the Barrett organization. One of these was the Jayne Chemical Co., pioneering in solvents and other coal-tar chemicals. Through still another acquisition, the Barrett Company became a factor in the manufacture of creosote for preserving railroad ties, fence posts, dock timbers and other wooden materials.

After establishing a felt mill, a research laboratory and a modern roofing plant, as well as tar distillation factories in four cities, Barrett watched the coming of the horseless buggy. The need for improved highways resulted in Barrett "Tarvia" roads which emancipated early automobiles from the mud.

Seeking outlets for coke oven light oils, Barrett increased operations at the Frankford, Pennsylvania, plant acquired through the Jayne Company. A new line of high quality products needed in the manufacture of tires, rubber cement, artificial leather, paints and var-

WATER TRANSPORTATION, through a fleet of tugs and barges, keeps the products of Allied Chemical moving—and effects important economies in overall costs. Semet-Solvay Division's tugboats push barges of coal from West Virginia on the Kanawha and Ohio Rivers to plants in Ohio and Kentucky; as well as coke to Semet's East End Yards at Cincinnati.

ANILINE DERIVATIVES WAR USES

SULFA DRUGS

- Wounds
- Burns
- General Infections
- Pneumonia
- Secondary Infections
- Venereal Diseases
- Ear, Nose and Throat Infections
- Eye Infections
- Respiratory Infections
- Intestinal Diseases
- Prophylactic Uses

DYES

- Uniform Dyes
- Aviation Gasoline
- Camouflage Dyes
- Practice Bomb Tips
- Military Plastics
- Sea Markers
- Depth Charge Markers
- Life Jacket Dye Packs
- Colored Smoke Generators
- Smoke Pots
- Photography
- Shark Chasers

RUBBER CHEMICALS

- Accelerators for Synthetic Rubber
- Anti-Oxidants for Synthetic Rubber
- Peptizers for Synthetic Rubber

OTHERS

- Tetryl Explosives
- Centralite
- Insecticides
- Fungicides
- Camouflage Paints
- Protective Chemical Agents
- Pharmaceuticals
- Lubricating Oils
- Petroleum Refining
- Wood Preservatives
- Intermediates

—Gen. Chem. Photo.

A TANK CAR is being filled with sulfuric acid at General Chemical's Baton Rouge plant. Allied Chemical's Divisions own or lease a modest railroad of nearly 5,000 such cars. They are part of an integrated transportation system which speeds essential chemicals to industry; including convenient air and water terminals as well.

nish removers was funnelling out to industry. This Frankford Works is one of the largest coal-tar intermediate plants in the world.

In 1904, "Specification" roofing itemized the precise quantities and grades of materials to go into every Barrett roof. It marked the entry of quality control into the roofing field.

Barrett, in 1910, joined with the General Chemical Company and the Semet-Solvay Company to form the Benzol Products Company for the manufacture of nitrobenzene, aniline and other coal-tar synthetics largely used in synthetic dye production, then an infant industry in the U.S. Here was a way these important Divisions-to-be of Allied Chemical could most effectively develop the country's coal-tar potential. Organic chemistry was commencing to develop on a large industrial scale.

For several years, an almost ruinous price-cutting war was waged by the German dye cartels. Then, Europe was plunged into a world conflict which completely altered international trade balances—and some monopolies—as they had existed.

The Government called on Barrett many times for aid in the war effort. One result was the accelerated manufacture of coal-tar chemicals required for the synthetic phenol used in explosives manufacture. But, as has been so often the case, the fruits of such defense industry held even more significance for the postwar world.

* * *

IF THE GROWING nation of the 19th century needed the heavy products of what is now the Barrett Division of Allied Chemical, it surely had equal need for a colorful look—in part to lift it from the doldrums of the Civil War. Thus, National Aniline's roots grew.

The energetic German-born Jacob F. Schoellkopf had already cut his teeth in the leather business. In 1879 he decided to crack the European dye monopoly with his own company. It commenced operations in Buffalo with an investment of a million dollars, and soon he was producing black dyes for women's stockings of such high quality that even his native Germany bought licenses for the process.

Schoellkopf won the distinction of continuing in business in spite of foreign price cuts and ridiculously low tariffs on imported dyes. His firm's success was augmented by selling a diversified line of chemicals and drugs along with coal-tar distillates and aniline oil.

By the outbreak of World War I, the Schoellkopf works was producing more than 100 dyes. This was of immeasurable value as a start toward American self-sufficiency in a most important industrial field.

Even so, much remained to be done. The company had to make its own intermediates, among other things. In 1917 a far more effective organization was created by merging the Schoellkopf firm, W. Beckers Aniline & Chemical Works, the Benzol Products Company, and the Standard Aniline Products Corporation into a single company called National Aniline & Chemical Company. This not only established a firm equipped to produce coal-tar colors, but one which could make coal-tar intermediates from start to finish.

National Aniline had close ties with Barrett, General Chemical and Solvay Process. The merger provided that National would take over the manufacture of some of the organic chemicals that these companies had been making.

By the end of the war, National had facilities for producing most of the previously-imported dyes, including anthraquinone dyes which have a particular affinity for cotton.

* * *

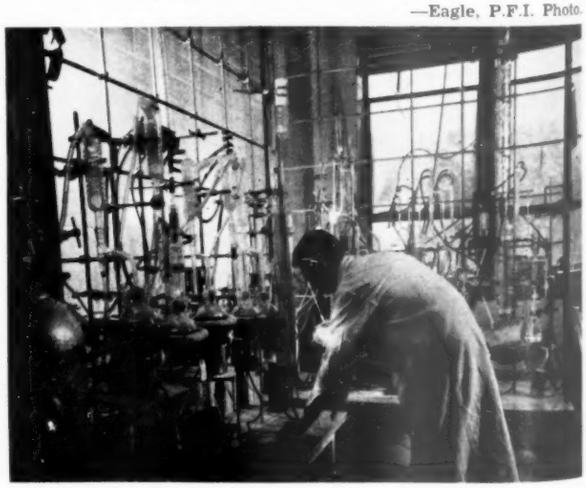
BUT AMERICA also needed alkalis. Solvay Process came into being when W. B. Cogswell, an engineer, and Rowland Hazard, a Rhode Island textile manufacturer, secured the American rights to a process for soda ash manufacture developed by Ernest and Alfred Solvay of Belgium. A plant was established in Syracuse near sources of salt and limestone.

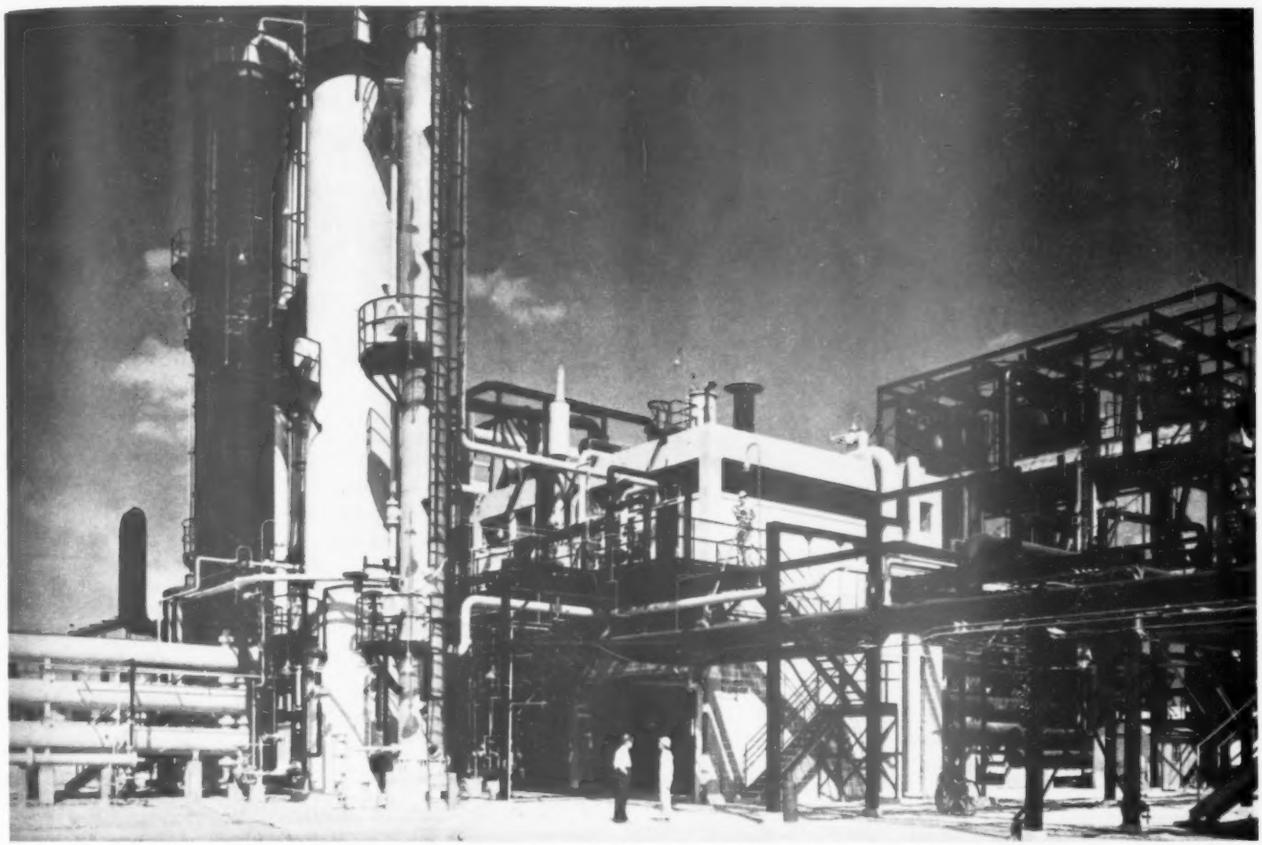
It was not technically desirable to follow foreign machinery plans in exact detail. Equipment had to be redesigned and inexperienced workers instructed in this new method of manufacture. Only three or four of the force had ever been inside an ammonia soda works. The majority were farmers or salt boilers.

Finally, difficulties were conquered and the Solvay Process Company made its first soda ash in 1884. The new company resolved to assure a continuous supply of the coke and ammonia needed in the Solvay process.

THE FUTURE IS SHAPED in such laboratories as these. This chemist is helping to further Allied Chemical's vast research program, accelerated since the end of World War II. More than 1,800 people are engaged in this field, important both in defense and the production of tomorrow's consumer goods.

—Eagle, P.F.I. Photo.





A MAZE OF STAINLESS STEEL PIPES AND TOWERS are silhouetted against the skyline at Orange, Texas. There, Nitrogen Division's plant manufactures ethylene oxide and glycol, in demand for use in such products as detergents and gas purification. It is one example of Allied Chemical's part in the picture of American industrial progress and modernization of equipment.

In 1892, the first by-product coke ovens were erected in Syracuse; three years later, Solvay sponsored the organization of the Semet-Solvay Company to put such ovens on a commercial basis. And that is how another American industry was born.

The second alkali plant was built in Detroit in 1896, and subsequently a third at Baton Rouge. Like their predecessor, both were close to raw material sources.

* * *

FOR CENTURIES, smoke from any kind of fire poured into the air. This was the case with the thousands of "beehive" ovens which were producing coke for blast furnaces and iron foundries many decades before Semet-Solvay was organized. Few scientists were aware that valuable chemicals, such as ammonia, coal tar, and light oils, were literally going up in smoke.

In Semet-Solvay's by-product ovens, coal was baked by external heat. This kept by-products from being lost.

Within a year after Semet's formation in 1895, it had constructed 50 ovens for the Dunbar Furnace Company (later to become American Manganese Company). While up to that time, coke from this new type oven had not been accepted for blast furnace use, the 50 ovens quickly dispelled all fears. By-product coke was thereafter accepted by the industry as a superior fuel and Semet was soon in the coke oven business throughout the country.

In 1900 Semet built a plant at Syracuse to recover benzol and toluol from coke oven gas. The especial importance of toluol to the Armed Forces is self-evident.

By 1914, or shortly thereafter, Semet had built or was building a number of chemical plants to turn out products of wide application in peace and war:

A plant at Split Rock, New York, for the quantity manufacture of several non-sensitive explosives.

A plant to produce aniline and other intermediates for synthesis into dyes, pharmaceuticals and photographic materials.

Plants in Pennsylvania and Kentucky for chemicals used in paint pigments and dry colors.

Ammonia recovery stills and a chlorine plant at Syracuse.

By-product ovens were constructed for the steel and chemical industries on an accelerated wartime basis. Semet's own coke oven plants were operated at top capacity. It had acquired its own coal mines, which proved most effective insurance against coal shortages.

Today, Semet owns large mines in West Virginia, and supplies at least 65% of its own requirements.

* * *

TOWARDS THE END of the 19th century, it became obvious that an expanding economy required the formation of businesses on a broader scale. One answer to this need came in 1899 when twelve chemical companies combined under the leadership of Dr. William H. Nichols to form the General Chemical Company.

Even then the demand for sulfuric acid was growing rapidly, and the lead chamber method of manufacture could not produce acid of the desired strength. About 1900, General pioneered in its own contact process for manufacturing this most basic of acids. During World War I, General Chemical continued to expand the products of its strategically located plants.

Prior to 1916 America depended largely on Chile for its supplies of nitrogen for explosives and fertilizers, although a small amount was obtained from by-product

(Continued on page 34)

GEORGE MASON AND THE BILL OF RIGHTS

By MARIE TUNSTALL LINGO

GEORGE MASON was born of English parents in Fairfax County, Virginia, in 1725. The descendant of a Royalist family, he was neither politician, nor lawyer, nor did he attend college. He was a plantation owner, living at Gunston Hall on the Potomac in virtual retirement. Here he studied the encroachments of the British on the liberties and individual freedoms of the colonists.

The Constitution of the Royal Colonies emanating from the King and his Council consisted of commissions issued by the Crown to the Governors of the Colonies. After careful research in reading the Magna Carta, the Petition of Rights, the English Bill of Rights, and the English Act of Settlement, George Mason formulated the Virginia Bill of Rights, a radically liberal document. It summed up boldly, and committed to writing, concepts of human freedom which had been slowly developing through the ages but had never before dared be proposed as the individual rights of man.

Leaving beautiful Gunston Hall, he answered the call of his countrymen and reluctantly rode the some 140 miles to Williamsburg. The times were desperate in the American colonies and Williamsburg was a silent city on that May 17, 1776. This was a day of fasting and prayer, for two days previously the Virginia Convention, taking the place of the Colonial Government in Virginia, had called for independence from Britain. The British flag had been pulled down from the cupola over the Capitol in Williamsburg and the Grand Union Flag of the Colonies unfurled in its place.

Mason was immediately appointed on the committee to draw up a bill of rights and a constitution. (The Virginia Bill of Rights was Mason's contribution, and a draft of this document was on display in a special Declaration of Rights exhibit in the Wren Building, Colonial Williamsburg, as a feature of the Prelude to Independence observance in 1952.) On June 12, 1776, less than four weeks after his arrival, the Virginia Bill of Rights was adopted.

In 1769 George Washington had presented to the Virginia legislature a series of resolutions against the importation of British goods. These were written by his good friend and neighbor, George Mason. The following year Mason had written the famous Fairfax Resolves which called for unity among the Colonies, a Continental Congress and a joint Colonial Defense. The Resolves stated the principle over which the Revolution was fought: Taxation without representation is tyranny!

Although racked by chronic illness at 62, Mason left his home, Gunston Hall, where he had lived happily, rearing nine children, and again answered the call to duty at Philadelphia, where he assumed an active role in drafting the Constitution of the United States. By the end of August, Mason saw his battle for the sovereignty of the people jeopardized by those who would centralize power in the Federal Government. Through his tireless campaign the First Ten Amendments, the Bill of Rights, were

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EDITOR'S NOTE—To the editor's desk recently came a packet of interesting publications of the National Society, Daughters of the American Revolution. Included was a leaflet about the patriot George Mason, and his authorship of the Bill of Rights, written by Mrs. Marie Tunstall Lingo. Mrs. Lingo, a resident of Washington, D.C., is a member of the Society and also is Historian of the affiliated Society, Children of the American Revolution. It appears that comparatively little has been written about George Mason, although he was one of the major contributors to the literature of Freedom.

December 15 was "Bill of Rights Day." We learned also that George Mason's house, Gunston Hall, in Virginia, located about fifteen miles south of Alexandria, has been restored by the National Society of the Colonial Dames of America and is now a national shrine open to visitors. The period furnishings are also gifts of the Colonial Dames.

Visitors to A.F.C.A.'s next annual meeting, to be held in Washington in May, would find a trip to Gunston Hall very much worthwhile.

The Journal is indebted to the D.A.R. for their kind permission to reprint Mrs. Lingo's interesting and informative article together with the Society's presentation of those precious ten amendments which constitute the Bill of Rights.

The above photo of a painting of George Mason and the picture of Gunston Hall were furnished through the courtesy of Mr. Frederick J. Griffiths, Director of the Hall.

Gunston Hall, Va.—Home of George Mason

included in the Constitution. Thus protection of individual freedom and of the sovereign right of the people was assured through the tireless efforts of this great patriot, George Mason.

Although offered the nomination of Senator from Virginia, knowing that the individual freedom of man had triumphed, Mason returned to Gunston Hall, where he died in 1792. Let us revere his example and remember that eternal vigilance is the price of liberty. Accept the challenge and battle to protect this liberty which has evolved through the valiant struggles of courageous men so that this liberty shall not be carelessly lost by Americans today.

THE BILL OF RIGHTS

First Ten Amendments to the Constitution of the United States

ARTICLES in addition to, and amendment of, the Constitution of the United States of America, proposed by Congress, and ratified by the legislatures* of the several states, pursuant to the Fifth Article of the original Constitution.

ARTICLE ONE

Freedom of Religion, of Speech, and of the Press

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

ARTICLE TWO

Right to Keep and Bear Arms

A well regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed.

ARTICLE THREE

Quartering of Soldiers

No soldier shall, in time of peace, be quartered in any house, without the consent of the owner, nor in time of war, but in a manner to be prescribed by law.

ARTICLE FOUR

Security from Unwarrantable Search and Seizure

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the person or things be seized.

ARTICLE FIVE

Rights of Accused in Criminal Proceedings

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject for the same offiense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

ARTICLE SIX

Right to Speedy Trial, Witnesses, etc.

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the state and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

ARTICLE SEVEN

Trial by Jury in Civil Cases

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any court of the United States, than according to the rules of the common law.

ARTICLE EIGHT

Bail—Fines—Punishments

Excessive bail shall not be required, nor excess fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE NINE

Reservation of Rights of the People

The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.

ARTICLE TEN

Powers Reserved to States or People

The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.

(The first ten amendments were all proposed by Congress on September 25, 1789, and were ratified and declared in force on December 15, 1791.)

*Article 20, Amendments, was the first to require ratification not by legislatures but by conventions.

NATIONAL SOCIETY, DAUGHTERS OF THE AMERICAN REVOLUTION

NATIONAL DEFENSE COMMITTEE

1776 D ST., N.W., WASHINGTON 6, D. C.

—U.S. Army Photo

SECRETARY OF THE ARMY
WILBER M. BRUCKER

U. S. ARMY ADJUSTS TO THE NUCLEAR AGE

Outstanding Program Provided at Second Annual Meeting of Army Association.

—U.S. Army Photo

CHIEF OF STAFF
GEN. MAXWELL D. TAYLOR

THE ASSOCIATION of the U.S. Army, holding its second annual meeting in Washington, D.C., October 25-27, provided an outstanding program of highly informative and forward-looking talks by twenty or more of the Nation's top military leaders and specialists.

The three-day session together with an impressive exhibition by the Army itself of the weapons and equipment of today's ground forces, held concurrently at nearby Fort Myer, Va., added up to a comprehensive briefiing on the status, present far-flung commitments and future development of the Army as envisioned by its leaders.

The armament exhibit, covering a 25-acre tract, after initial showing to the Association and the press, was open to the public. It proved so popular that it was held on and continued the following week. Thousands came to see it.

Space limitations preclude any attempt at description of this display here. It must suffice to point out that virtually all of the Army's combat and service elements today make extensive field use of electronic and other types of complex equipment, and power-operated tools, and instruments, as well as vehicles. It was obvious to visitors that the operation and maintenance of such materiel require intelligent, technically trained men—and in much greater proportion today than ever before.

The keyword for the meeting, held at Washington's Sheraton-Park Hotel, was "Futurarmy," symbolized there by a life-size, illuminated figure of "tomorrow's soldier," looking very much like the Man from Mars in flexible plastic tunic and visored helmet. And the keynote speech was a crisp, incisive analysis by the Chief of Staff, General Maxwell D. Taylor, of the Army's outlook as it moves to adjust itself to the nuclear age.

"Perhaps the most pressing problem," he said, "which the Army faces today is to assess the impact of atomic-bearing missiles and projectiles on the nature of the land battle, and then to effect a proper adjustment of organizational techniques, equipment and weapons."

General Taylor stated as his firm conviction, however, that the Army must be organized and equipped either to wage non-atomic warfare, or "to use atomic weapons as the situation requires and as proper authority determines. . . .

"There will never again," he asserted, "be a war involving the major powers without the use or the threat of the use of atomic weapons. Until they are used, the threat will hang over every engagement, and will impose a requirement for constant readiness for an atomic surprise. A sure way to encourage an enemy to use atomic weapons would be to confront him with a force unprepared for atomic action."

DISCUSSING FIELD force organization and tactics "adapted to the atomic battlefield," he emphasized the need for "rapidity of offensive reaction." That, he said, "must stem not only from an increased mobility and streamlined command echelon, but also from the ability of small battle groups to operate independently for long periods over great distances, coupled with an ability to live dispersed and to concentrate rapidly to fight."

This same concept of battle groups of all arms, as parts of a division but largely replacing the infantry regiments and battalions, was discussed by Lt. Gen. C. D. Eddleman, Assistant Chief of Staff for Operations, in his address dealing extensively with tactics, weapons and equipment, later in the program. He told of current tests along such lines of the 101st Airborne Division organized on a pentagonal, or five combat unit basis.

In concluding his remarks, General Taylor, as in the case of most all of the other speakers, emphasized the paramount importance in the modern Army of men possessing the human qualities of courage and fortitude connoted by the phrase, "a good soldier." He said: "I would like to stress that nothing we have discovered, or nothing that we expect to discover will reduce the need for brave men to fight our battles under conditions of hazard and hardship. New weapons will serve our soldiers without replacing them."

One of the most interesting talks was that of Major General John B. Medaris, Ordnance expert in charge of the Army's guided missile and rocket development program. General Medaris reviewed the history of the program, described in general terms the Army's array of these fantastic weapons, noting, however, in view of security considerations, that, "like the iceberg, the development of weapons and resources for your defense can only be one-eighth in sight." General Medaris emphasized the importance of accuracy in this development in conformity with "the Army's traditional policy of selective concentration of the required amount of force at those key places where control can be seized and held." With respect to the Army's parade of modern weapons, he said, "Each in its field is characteristic of the Army's insistence upon accuracy and the availability of measured force at the required place."

Aside from the use of missiles and weapons for the "selective application of measured force," General Me-

daris referred to their possibilities as carriers for "the most efficient delivery system that can be predicted."

—U.S. Army Photo

Mr. John Slezak, new president of the Association of the U. S. Army.

REFERRING to German World War II missile development, he told of the coming to this country under U.S. Army auspices of Dr. Wernher von Braun and his associates, who are now American citizens. Dr. von Braun who is employed on missile development at Redstone Arsenal, Alabama, followed General Medaris on the program, carrying still further the vision of possible military operations in outer space.

"The day is fast approaching," he said, "when from protected land areas, men will be able to launch stations into space which can obtain and transmit information critical to the conduct of war. . . . Ultimately it will be possible to launch weapons from such stations, with deadly precision upon hostile installations."

Another outstanding civilian figure on the program was Dr. Edward Teller, noted nuclear physicist, from the University of California, at Berkeley. He referred to himself as an amateur in military matters, but expressed his opinion that small self-sufficient units will be needed to cope with atomic warfare conditions. He said such a force as he envisioned, emphasizing extreme independence and self-reliance of each of its members, could only be developed by a free country, "in which the greatest emphasis is placed on the initiative, [and] in which individualism is encouraged. . . "

In summing up the presentations on Army research, Lt. General James M. Gavin, military research and development chief in the Department of the Army, stressed the long-range problem of adequate fuel supply for such highly mobile forces as envisioned during this meeting. In that connection, he said: "A host of forms of energy release through chemical action" are being studied. He referred to the chemical phenomenon of "free radicals" resulting when certain molecular structures are split and the attendant release of great energy when these radicals are recombined, as possibly adaptable to fuels, propellant or other high energy use.

In regard to missiles, he said: "The day will come when the missile form itself can serve men as a means of transport. We must be prepared to provide the high energy fuels required for its propulsion; this will be a key requirement for that new mode of travel."

CONCLUDING THE ASSOCIATION'S program, except for the business session on the day following, was a stirring speech by Secretary of the Army Wilber M. Brucker, at the banquet on October 26. Excerpts follow:

"The fundamental aim of military policy is to support our foreign policy, of which it is an inseparable part. America's major goal is the prevention of war and the establishment of enduring peace in which will be enthroned the principles and human values which are the foundations of our enlightened civilization. Our Armed Forces are not only the reliable guardians of our freedom and national integrity—they are also the most dependable pillars of our diplomacy for peace.

"Foresight, imagination, and a bold and realistic approach to the problems of defense in the atomic age have characterized the development of our present military program. It is wisely designed to provide the required strength without jeopardizing the basic freedoms of our people or the vigor of our economy.

"The team principle is fundamental to all our military efforts. Our interdependent Army, Navy, and Air Force work together to maintain the tridimensional power necessary to deal with an enemy on land, sea, or in the air. Each member has a unique and essential role. Each complements and supplements the others. Our military policy is not shackled to a single concept of war, nor is it based upon any one weapon or family of weapons. A resourceful enemy could be expected to strike by one means or another at our weakest point. Hence we are not allowing ourselves to be weak or vulnerable in any particular. Our Defense Team is so constituted that it is ready for whatever emergency might develop during these critical years—whether it be a global or general war, a local or limited war, or any other form of aggression. It is capable of applying military power with proper discrimination to meet every situation with maximum effectiveness. . . .

"Comprehensive briefings at this meeting have already emphasized the Army's vital mission as a member of the Defense Team. They have provided a striking panorama of our modern, streamlined Army and its substantial progress toward maximum capability under unprecedented conditions, including nuclear warfare. In order to evaluate properly these advances which have been made, we must consider the tasks which confront the Army today in discharging the grave responsibilities with which it is entrusted. We must visualize the Army in global perspective.

"The United States is associated with 45 other nations in the most powerful system of collective security ever created. The Army stands shoulder to shoulder with the troops of our allied friends along the iron and bamboo curtains as a potent reminder that we are ready to honor our international agreements promptly, and to oppose any aggressor with the full force of American military might. In support of our mutual defense alliances and other arrangements, nearly half the strength of our Army is stationed overseas in 73 countries. . . .

"Army missions in 44 countries of Europe, Asia, and South America are busy with the continued strengthening of our allies. Over 6,000 highly qualified Army troops are directly engaged in helping to train more than 200 allied divisions—a sizeable part of the Free World's military strength.

"Here in the Western Hemisphere, the Army provides for the continental defense of the United States against airborne and seaborne troops. From far up in Alaska, . . . all the way to the Caribbean, Army troops are protecting the hemisphere approaches. . . .

"One of the Army's most important tasks is to prepare for the enormous expansion of its forces which would become necessary at once in the event of war. . . .

"The imposing array of responsibilities which rest upon our Army today is matched by its impressive accomplishments and employment of new weapons, modern equipment, streamlined organization, and atomic battlefield tactics. . . .

"Although we are stressing the development of atomic weapons, missiles and rockets, we are not overlooking the importance of continued improvement of conventional weapons, which are urgently needed for the accomplishment of countless specific tasks with which a field army is faced. . . .

(Continued on page 35)

CURRENT RESEARCH IN ENTOMOLOGY AT ARMY CHEMICAL CENTER

By CHARLES C. HASSETT

From the

Physiology Division, Chemical Warfare Laboratories

Army Chemical Center, Maryland

Foreword by Dr. David B. Dill, Deputy Director of Medical Research, A.C.C. **The author has been chief of the Entomology Branch of CWL since Dr. Leigh Chadwick resigned in August 1956 to become Professor of Entomology and Head of that Department at the University of Illinois. Dr. Hassett's long association with the Chemical Corps (10 years) and outstanding record both as a scientist and administrator ideally qualify him as Dr. Chadwick's successor. Dr. Hassett directs research on mechanism of action of insecticides, insect repellents, and insect attractants; responsibility for this project is assigned to the Chemical Corps by the Department of the Army.**

RESEARCH IN ENTOMOLOGY was initiated in the Medical Division, Chemical Warfare Service, during World War II. The branch, now a part of the Directorate of Medical Research, Chemical Warfare Laboratories, is charged with fundamental physiological studies of the mechanism of action of insecticidal compounds. Under this general project research has been carried on in many phases of entomology. At the present time, much of our interest lies in the very serious problem of insecticide-resistant insects, a phenomenon which threatens us with loss of control over disease bearing insects.

We believe that the improvement of results from existing types of insecticides, and the development of new types, will be facilitated by exact knowledge of the physiology, biochemistry, and genetics of insects, both normal and resistant types. Investigations into the sequence of events in the breakdown of carbohydrate compounds, called intermediate metabolism, have shown that insects and vertebrates have different pathways between glycogen and the end products carbon dioxide and water.

One by one, the reactions involved in glycolysis are being identified, and with them we are acquiring more precise knowledge of the roles played by various compounds. It has long been known that adenosine triphosphate (ATP) is the prime source of energy for the initial contraction of muscle. Recent studies on the house fly by Sacktor and Cochran have shown that mitochondria, which are small formed bodies in muscle cells, contain the enzymes which dephosphorylate ATP, converting it to ADP (adenosine diphosphate) and initiate the cycle of reactions involved in muscle contraction. The same investigators have shown that other nucleotides occur and play roles similar to ATP in insect muscle. These compounds are guanosine triphosphate (GTP), inosine triphosphate (ITP), uridine triphosphate (UTP), and cytidine triphosphate (CTP). During the breakdown of these nucleotides, the two pyrimidines, UTP and CTP, lose all three $-PO_4$ groups, while the three purines ATP, GTP, and ITP, lose only two $-PO_4$ groups. Indirect evidence from the work of these men indicates that there is a specific enzyme in the mitochondria for each nucleotide, although it has not yet been possible to separate and identify the individual enzymes. Further, it seems that Ca and the diphosphates, e.g., ADP, exert inhibitory effects on the enzymes, while ions such as Mg and Mn activate them. The interrelationships of all these factors are complex and as yet but partially understood, but as time goes on our knowledge will increase, and we may, perhaps, be able to select particularly vulnerable links in this chain for interference with vital function.

ANOTHER COMPLEX study is that of the influence of hormones on insect growth and development. This is a relatively new area of insect physiology but we already know of the existence of many hormones having diverse effects. These effects can be demonstrated by various experiments, such as amputation of the leg of a nymphal cockroach. Regeneration of the leg will then be governed by the presence of hormones, which depends on the proximity of the next molt. This can be shown experimentally by using an adult cockroach, which will no longer molt, and will not regenerate a lost leg, but can be made to do so if nymphal glands are transplanted into it. Amputation of a leg in such an adult will be followed by regeneration, showing that the molting hormone governs both processes.

Another system which can be studied in insects is the metabolic chain involved in the production of eye pigments. Here there are not hormones, but so-called "diffusible substances" involved. The hypothetical scheme for the production of brown eye pigment is a four step series: trytophane → formylkynurenine → kynurenine → 3-hydroxykynurenine → brown pigment. White-eyed mutants of the house fly *Musca domestica* are unable to perform step 1. Mutants of the blow fly *Phormia regina* are unable to perform step 4 even if the hydroxykynurenine is supplied by injection. But when the eye of a mutant of one species is transplanted to the other species, both transplant and host develop normal color, showing the presence of diffusible intermediates in each.

These experiments show the tentative state of hormone research. It is known that, as in vertebrates, there is need for balance among hormones if growth and development are to be normal. It is hoped that eventually enough will become known about hormones to enable us to upset the balance in some way. Hormones might then be substituted for the insecticides we currently use, with the advantage that, since they are natural components of the organism, resistance to them would not develop.

Grasshopper fossil of the Jurassic Age, 140 million years ago.
Photo courtesy American Museum of Natural History, New York

Here yesterday . . .

here tomorrow?

In a very old Book, it is written: "The land is as the Garden of Eden before them, and behind them a desolate wilderness, yea, and nothing shall escape them." (Joel 2:3) The reference is to grasshopper damage. In the United States, grasshoppers inflicted heavy crop losses as early as 1797. In 1877, grasshoppers alone were causing 2 million dollars' damage to crops each year. In addition, many other kinds of crop pests were making serious inroads on all types of commercial and food crops. Growers were constantly faced with the spectre of near or total crop destruction.

Today . . . thanks to modern chemical discoveries . . . things are different! Pesticides such as aldrin, dieldrin, endrin, D-D(R), and Nemagon are powerful weapons in the "batttle of the bugs." They kill fast. In some uses, they kill for months and years after application. These pesticides were born of years of research and vast expenditures of money. But research never stands still! Even now, as these pesticides take their place as leaders throughout the agricultural industry, Shell Chemical has new pest-killing chemicals in the experimental stage. In time, they too will be ready for effective commercial application. And perhaps Mr. Grasshopper may indeed be "here today, gone tomorrow."

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The use of radioisotope technic is being developed as a means to explore sensory physiology in fleas. By injecting radiophosphorous (P^{32}) into a host mammal such as the rat or guinea pig, and permitting fleas to feed until they are satisfied, it is possible to measure the amount of blood taken up by counting the disintegrations of P^{32} in the flea. This has been found to be more accurate than weighing. After establishing this normal value, the effect of various chemical agents on feeding can be measured. Candidate repellents can be applied to the skin of the host and the volume of the blood meal can be compared with the normal. This technic should yield data on repellents for the flea comparable with similar information obtained for the fly by Chadwick and Dethier in this laboratory.

RESISTANT STOCKS of house flies have been developed and studied here for several years, and recently similar colonies of resistant mosquitoes *(Aedes aegypti)* have been set up. As a part of the biochemical studies referred to previously, a search for differences in the metabolism of normal and resistant strains has been pursued. Morphological and genetic studies have shown that as resistance develops, certain changes in form appear. From this it seems possible to identify the resistant fly by external examination, a quick way for the field entomologist to detect the appearance of resistant strains in the wild species. The work with mosquitoes will aim at the same kind of information. Laboratory development of resistant strains also offers the opportunity of predicting whether resistance is likely to occur in a native population of insects, and how fast it will develop.

It will be apparent from the mission of the laboratory that the Entomology Branch is not intended to perform insect control work, which is the responsibility of other branches of the Service. Insects have shown an amazing ability to adapt themselves to control measures, therefore we must constantly seek new answers to the problem. We believe that these answers will be derived from research which gives us better information about the organism, regardless of its apparent lack of immediate application.

NEW CIVIL DEFENSE PLANNING GUIDE INCLUDES CW AND BW PROVISIONS

AN ENEMY ATTACK on the United States would hit hard at this nation and its people and spread radioactive fallout over considerable areas, but it is to minimize the resultant casualties and damage that civil defense is preparing and planning today.

This is the theme of a new set of planning assumptions issued in October by the Federal Civil Defense Administration for the information and guidance of civil defense officials at the Federal, State and local levels.

The assumptions, FCDA Administrator Val Peterson said in an advisory bulletin, "deal with a situation which we all earnestly hope will never occur, but for which elementary prudence demands that we be prepared."

In no sense predictions, the assumptions were drafted through FCDA appraisal of the most recent known or estimated capabilities of potential aggressors to attack the United States.

The document acknowledges as basic premises that the USSR has the technical and industrial capacity to wage full-scale war and the power to attack any United States target, using nuclear or conventional weapons and even biological and chemical warfare agents.

Pending development of the intercontinental ballistic missile and similar weapons, the FCDA document assumes the major attack would be by air strikes with nuclear weapons. Allowance also was made for nuclear weapon attacks "delivered by missiles or mines from submarines or surface vessels or by clandestine means," but "on a scale considerably less than that of the air attack."

The enemy will aim principally for surface bursts, it is assumed, since radioactive fallout spread for miles downwind from "such bursts can increase casualties and interfere with military or civilian activity for days or weeks."

CHEMICAL AND BIOLOGICAL warfare agents will be used against humans, it is assumed, "to increase confusion and impede defensive actions." The document adds: "The chances of use of such weapons are greater in subsequent attacks than in the initial blow. In any case, the threat is minor as compared with that of nuclear weapons."

The use of biological warfare agents against animals and crops is envisioned. Moreover, it is assumed "that psychological warfare and all-out propaganda efforts will accompany any attack in order to magnify and distort the real situation, to disrupt defense programs, impair essential production and weaken our will to fight."

Prime targets, it is assumed, will be military bases and heavily-populated and industrial areas.

Concerning warning time, it is assumed that a civil defense alert of an impending air attack will be received on the Canadian border and on the Atlantic, Pacific and Gulf coasts "from one to three hours before targets within these boundaries will be under attack."

The document made it clear that the planning assumptions are not to be regarded as predictions of what an aggressor would do if it did attack. It added: "For obvious reasons, there can be no certainty in predicting the type of attack that might be visited on this country, the pattern of that attack, or the weapons that might be used." (From FCDA News Release)

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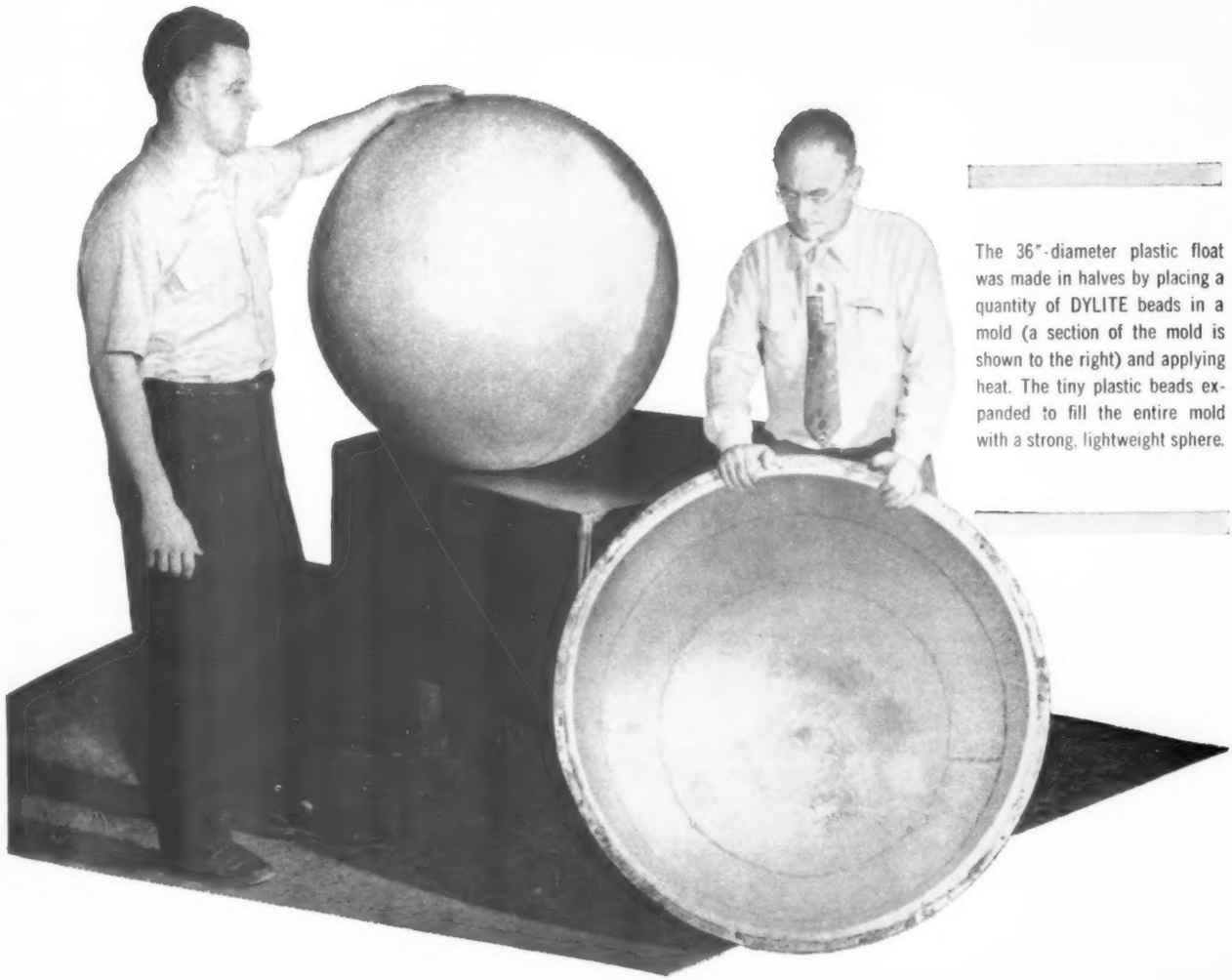

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MIDWEST CHAPTER

(Continued from page 13)

Colored veterans of the Korean action unanimously bring out that they were fighting for democracy for the Koreans, and yet at home they do not have, in many cases, democracy for themselves and their families. In line with this thinking, they feel that on a military installation the racial problem should not be brought to attention by providing such things as separate barber facilities, and clearly pointing out that a social function is for "Whites only." They do not like to be assigned to southern bases because off the base activity is in such unsavory environments that it only breeds trouble.

In the case of a segregated colored unit which grew from a nucleus of colored personnel, it would welcome integration as a challenge. Such a unit recently took in a white reservist and it is working out quite successfully.

On the credit side of the ledger, RFA55 affords the colored man an opportunity for training that he finds difficult to obtain in civilian life. The summer camp program, to many of these men, provides facilities which they do not have at home, and hence it becomes an inducement for them to better their station in life.

In order to implement this facet of the Reserve program, the Task Force made the following recommendations:

1. Regardless of race or location of activity, when a man becomes a member of the armed services, he becomes a soldier, a sailor, a marine, or an airman, and the sooner this is recognized, the sooner the problem of integration will cease to exist.

2. The Department of Defense should not yield to social pressures from without a military installation on the racial situation.

3. Colored personnel should be encouraged and given every opportunity to qualify for duties in other than field services.

4. Colored personnel should accept the full responsibilities attached to wearing the uniform of the armed services.

R.O.T.C. PROGRAM

Examination of the students' reactions to the ROTC Program shows that they compare this program with the type of instruction they are receiving in their regular university courses. For example, in the basic two-year course, they are taught about what a recruit would learn in his basic training period with the services. Little is done to sharpen this training.

The real problem comes in during the final two years when they are taking advanced courses at the university. In many cases the ROTC equipment used to instruct senior students is so outmoded and completely foreign to the advanced thinking of the student that he becomes apathetic toward the course and the service offering the course. Where the students' interest was held at a high degree, it was through the personal ability of the instructor.

In order to increase and hold the interest of the college student in the ROTC Program, the Task Force recommended the following steps:

1. That the best qualified officers be assigned to ROTC units, as these officers are under heavy public scrutiny.

2. Recognizing that the student should understand old types of equipment since he may encounter it in the field, he should also have experience, or some acquaintance, with modern weapons. This could be done by having highly trained teams take new weapons on tour to various ROTC units throughout the school year.

3. Trained teams of the armed services should visit the various universities and colleges to sell the services as a career, and show factually the long range financial benefits, career training, and opportunities that the services offer over the inducements of Industry and Commerce.

4. On special occasions, industry should assist wholeheartedly in making equipment available for demonstration purposes, and their specialists on government items should also be made available to the ROTC department for instruction.[1]

5. The Department of Defense should make sure that when an ROTC unit has its annual award or honors day celebration, officers of rank and national recognition are personally available for these occasions, as the student feels slighted when his branch of service is not equally represented with the other Services.

RESERVE OFFICERS

The Reserve officer will indirectly play an important part in the success of RFA55, and it is the opinion of the Task Force that his problems should be presented in this report.

The newly commissioned ROTC graduate quite naturally wishes to try the skills he has learned in college; and it is regrettable the number of cases where that officer was not assigned to a position in which his training could be utilized.

It is inherent that the normal risk of tenure on active duty causes qualified reservists to hesitate giving up an already launched career in favor of the military. Also the Reserve officer feels he is limited in promotion because he is a reservist, and secondly because of lack of vacancies.

Many of these officers have tours of duty in large communities, which cause a hardship due to the higher cost of living; they have had to utilize their savings in order to meet their financial responsibilities, since the allowances made do not fully cover the expenses.

The Reserve establishment cannot be expected to surpass or exceed the calibre of the men assigned by the Regular military forces to administer it.

1. It is the recommendation of the Task Force that every effort be made to use these young officers to their fullest advantage and give them the broadest possible indoctrination in their branch of service, especially working with troops.

2. It is our recommendation that a factual study be made of the problem of officers on active duty living in large communities, relative to housing, transportation, medical facilities, and commissary.

3. To overcome the problem of promotions, it is recommended that the training program for Reserve officers be of such a quality that it will benefit the reservist in his civilian life. A study should be made of the Air Force contracted training program for Reserve officers and this should be made available to the members of the other branches of the Department of Defense.

4. Each Reserve officer, whatever his status, should be periodically advised on the subject of promotions, and this matter should be freely discussed with the reserve officer so that he does not feel he is lost in the mass of services.

5. The administrating personnel assigned to the Reserve officer program should build enthusiasm, efficiency, morale, and a strong liaison between the regular and reserve programs.

6. The problem of tenure of active duty for reserve officers needs a revitalized study by both the services and the individual officer involved. It should become a personal project for each officer in this class to keep abreast of his personal position, and the services should cooperate to the fullest extent to keep him informed of his position.

THE GALLERY PLAN

There is a modification of the six months training plan, sometimes referred to as The Gallery Plan, which offers an accelerated program of training for selected personnel, in order to comply with certain conditions that face

[1]The Department's study did not concur with this recommendation stating that it felt "a well coordinated program as outlined in recommendation No. 2, would best fill this requirement rather than to have civilians bring in equipment not yet tested, or, perhaps, even contemplated for Army use.

both the trainee and the service. This plan embodies the advantages of the six month feature of RFA55 while permitting the person concerned to proceed with his educational planning.

The plan, basically, provides two three-month summer training periods with two-day per month training periods between the two summer programs. Upon completion of the second three-month training period, the boy then assumes the pattern of two days per month of training, and the usual two weeks of active duty each year until he has discharged his eight-year obligation.

There are advantages and disadvantages to this modification, and these are listed as follows:

Advantages

1. This plan affords the boy who wishes to go directly from high school to college the opportunity to do so, as he has only two three-month summer commitments, plus monthly drill periods on a week-end.

2. Parents and educators feel that this permits a continuation of scholastic training without undue interruption.

3. Parents feel that the 17½ year old boy has trouble in finding a summer job and the idea of having their son in a well-organized three-month program appeals to them.

4. The problem of adjusting vocational life to weekly drills is removed, as training occurs on Saturday and Sunday once a month.

5. Having the reservist for two full days of training per month will afford the opportunity of concentrated training on highly specialized programs.

6. This program will attract a select type of personnel, and for that reason the programs of training can be higher type programs.

7. Under the Gallery Plan, the two summer-month Reserve Training Programs will utilize the same facilities, training aids, and other equipment that are used during normal weekend drill training periods. Other than the use and maintenance of present equipment, there will be no additional expenditure for this program.

8. This program is particularly adaptable to reserve air units and highly specialized army units.

9. It is highly possible that this program could be coordinated with educational institutions of this country for scholastic and military recognition and credit. With additional experience and with the proper public relations, this program could well become an integral part of the American Educational System.

10. In the event of mobilization, reservists who are employed in a vital capacity in a key industry, instead of being dropped from the Reserve program, could be used as instructors in the regular reserve drill periods.

Disadvantages

1. Because of the necessity to travel to the points of training, the reservist would have to live in the proximity of such an installation in order to attend the two day a month drill periods and the two summer training programs.

Recommendations

It is recommended that the Gallery Plan be put in operation and be given a trial run. The facilities are in existence and the Plan could be put in operation with a minimum of expense.

RESPONSIBILITIES FOR THE SUCCESS OF RFA55

Section A—Commerce and Industry

Commerce and Industry must be made to recognize that RFA55 represents an insurance policy paid by the taxpayers of the United States for the continuation of their business against the threat of foreign aggression, and in the event of war, it is the bulwark to hold back an enemy from our shores.

They must be made to realize that the reservist in their employ is a valuable part of national defense, and they should study their programs and make allowances for the reservists to attend drills and summer camps. These programs should rate the same consideration as other civic programs and vocational activities to which they lend their enthusiastic support.

The Task Force recognizes the work many organizations have done to promote this relationship; however, too much of it has never reached the right ears and as a result the program has not been accepted.

RECOMMENDATIONS:

1. **A working policy group should be established at the national level of such organizations as the National Association of Manufacturers, the Chamber of Commerce of the United States, etc., to make policies which will be put into effect throughout their entire organization covering the following points:**
   - **(a) Coordination with reservists for attending drill periods.**
   - **(b) A payment plan for the period of a reservist's attendance at summer camp.**
   - **(c) The vacation period aside from the summer camp program.**
   - **(d) An active interest in the reserve program by visiting units, etc.**
   - **(e) Publication in house organs of information on the Reserve program and on the reservists' individual activities.**
   - **(f) Encourage competition for the Defense Reserve Award.**
2. **The armed services should appoint advisory councils at the national, state, and community level for members of commerce and industry to work with them to promote**

a closer liaison and understanding of the Reserve Program.

Section B—The Community

The community must be taught that the armed services are an important part of their lives, and it would be well if they organized their civic activities to include the armed services as an integral part of the community.

Communities in the vicinity of a military installation should be constantly on alert to see that members of the Armed Forces are not exploited and that the off-duty facilities in that community are not of a honky-tonk variety. The community must recognize that the men of the Armed Forces in their community are somebody else's sons away from home and accord them the treatment they would like their own sons to receive in a strange place.

Better relations will result if members of the Armed Forces comport themselves in a manner to bring credit to the service.

Section C—Labor Unions

The labor unions should want to help RFA55; they should render real service to the program and work hand in hand with Industry and Commerce on the establishment of programs for the reservists.

It is our recommendation that whenever management and labor sit down to negotiate a contract, this Nation's welfare should be foremost in those negotiations, and the reservist represents a major part of that welfare.

Section D—The Home

Every home that enjoys the protection and privileges of a free government owes not only a portion of their income, but even a part of themselves to the defense of that government.

The home should recognize that they have not been singled out by the Federal Government to give up a member of their family to the armed services, but that it is a part of the heritage of that family as much as the boy going away to school or joining a church. The home should talk quite frankly, and early in a boy's life, about his military heritage and work out a program with the proper agency to discharge that duty.

Section E—Armed Forces

The Armed Forces, it is regrettable to say, do not enjoy the position of public respect that is their due. This Task Force does not wish to single out any given service, but will point out in general the shortcomings of the Services in selling themselves to the public.

Public opinion toward the Armed Forces is molded by those who are now in the service and those who have been in the service, through their letters home, their contacts with their neighbors, etc. No matter how many reams of "poop" the Public Information people put out, it can be discounted if the people who are in the service (or were) don't like it and say so.

So, in the first place it is necessary to make the men in the service enjoy their tour of duty. They have to be made to prefer excitement, adventure, hard work to their humdrum boring and secure civilian lives. This is a challenge to the leadership of the Armed Forces.

The Armed Forces have to be good. Men cannot be proud of a mediocre outfit even if you feed them steak three times a day. To many men a cruise or summer camp is fun, but to some it is pure drudgery. This largely depends upon how much interest a person takes. If the commanding officer is alert, enthusiastic, and interested, he can make it interesting for his men, too. He can tell them what's going on, what to expect, why, etc.

Even if you have the best facility in the Armed Forces, people will not like it if others are continually talking it down. All personnel should tell their commands and each other, and they will have to tell the public, what a wonderful branch of service they are in. They must conduct themselves in a manner that indicates this pride, for the young fellow in the service is not going to get enthusiastic in a sloppy outfit.

In visiting one large defense command, one almost had the feeling that the officers would just as soon quit and go home if they could find a job. In no place on that installation was one proud word said for that branch of service, even though much of the early history of this nation was written on that installation, and it is one of the most beautiful in the country.

There are undoubtely many devoted officers and installations that exemplify a program that builds public relations and good men. The classic example of pride of service and devotion to the assigned mission which filters from the top right down through the organization can be found at the Naval Training Center in San Diego, California. Much of the success of that station can be laid to the devotion of the Commanding Officer, Captain C. T. Caufield, and his staff. It is the recommendation of the Task Force that Captain Caufield's methods should be studied.

A lesson can always be learned from the pride of the Marines, which was exemplified in our discussions with them, when they informed us that they might have some real problems, but they would work them out and then they proceeded to sell us the Marine Corps.

Where the Task Force found an enthusiastic six months active duty Reserve program, operating successfully in all phases, it could be traced step by step, up the ladder, to the Army Commander. Any section of the Defense Department would find it to their advantage to study the methods of Lt. Gen. William A. Arnold. He has built an enthusiastic team based on his selling of this program to the members of his Command.

To continue the high standards of training, there should be a minimum of fifteen days overlap when instructors are being replaced.

Too much has been made of the differences in pay scales between military and civilian personnel. If adequate housing and the return of full fringe benefits, and convenient medical facilities are instituted, the services would retain their personnel. Military personnel should be periodically reminded of their retirement program and what such a program would cost them in civilian life.

A possible solution to the housing problem would be for Congress to create a Defense Housing Act similar in nature to the Federal Housing Act which would establish funds for housing of commissioned and enlisted personnel. The allowances to service personnel for housing would be paid back into the fund and in the same manner the money appropriated could be reimbursed over a long range program.

RECAPITULATION

The Reserve Forces Act of 1955 became a law on August 9, 1955. From that date to September 30, 1956, the armed services have set up recruiting programs and training facilities, and have trained, or have in training 43,000 men in the 6-month active duty for training program. Think for a moment what this means: all the facets of establishing a program of recruiting, providing buildings for training and quartering these men, development of training programs, classroom material, training aids and qualified instructors. All the many other things necessary to make a program function smoothly. How successful were the services? The majority of the men trained in the six months program recommend it to their friends.

Will the Program succeed? This is up to us, and we have two choices—a large standing Armed Force which means a higher defense budget and an interrupted flow of manpower from our schools to businesses, or cooperation in every possible way with the present Reserve program, which will mean a smaller Armed Force with a Reserve ready if needed. The Defense budget could provide the new tools of war that are so costly, without the additional expense of a large Armed Force.

This nation, as it progresses in technological advancements, will need the best Reserve forces in the history of the nation. Our national defense has advanced a long way in training since Shiloh, but if our youth are not sold on the services, we could find ourselves in the same situation in a highly technical type of warfare.

The Department of Defense should head all coordination with groups recommended within the Task Force report, so that there is unity in the approach to organizations, and no duplication of effort. Each of the associations pledged to a Defense Department activity should establish definite programs on RFA55 with the same enthusiasm with which they tackle technical problems. The creation of these civilian committees is equally as important as the technical committees, as they deal with the one commodity that cannot be purchased or designed —MANPOWER.

It is impossible to take every boy and his parents to see at first hand the excellent training programs afforded, so the next best thing to do is to take the story of these programs through civilian channels directly to the home. In essence, this report establishes concepts starting at the national level and aimed right on down to the home.

The Task Force gratefully acknowledges the cooperation and support received from all quarters during the course of its investigation. Military personnel from coast to coast and in all branches of the service, as well as civilians, were eager to assist in any possible way. Without their assistance, the report could not have been completed.

NEW BOOK TELLS OF HEROIC RESCUE BY HAIG SHEKERJIAN

U.S. Army photo

Probably few, if any, members of the Chemical Corps ever heard the story of the heroic action of Brigadier General Haig Shekerjian when, as a youth of 16, he rescued a woman and her baby from a burning building.

General Shekerjian, now retired, served 11 years as an infantryman before joining the Chemical Corps in 1923. In World War II he commanded the Chemical Corps Training Center at Camp Sibert, Alabama.

The story about his rescue is told in "I Found The Happy Land," an adaptation, in the September 1956 issue of The Reader's Digest, of the book, "Song of America," by George Mardikian, copyright 1956 Geo. M. Mardikian, published by McGraw Hill Book Company, Inc., 330 West 42nd Street, New York, New York, price $4.50.

The author of the book, Mr. Mardikian, came to this country from his native Armenia in 1922 at the age of 18 and rose from dishwasher to famous chef, later restaurant owner, industrialist, rancher, and outstanding citizen in California. The passages of the book pertaining to General Shekerjian, printed here by permission of the author and the publishers, come where the author is telling of the need of the Armenian Relief Committee, organized in San Francisco, for a suitable person to supervise relief work after the War among the Armenian DPs in Europe. Mr. Mardikian states:

"Then the Lord was extra good to us. I heard that Brig. Gen. Haig Shekerjian, the first Armenian-American to graduate from West Point, was about to retire from the U.S. Army. There was my man!

"Armenians the world over revered this man. When he was 16, Haig lived in a Connecticut town and worked hard to support his mother and sisters. One day, on his way to school, he saw a house in flames and heard a woman screaming.

"Before the firemen could stop him, Haig dashed into the burning house and rescued the woman. When she screamed that her baby was still inside, Haig ran back into the house. Firemen and spectators thought he'd never make it. Then he stumbled through the flames with the child in his arms.

"Haig became the town hero. The citizens offered him a house, an automobile, a trip to California. The boy gratefully refused them. 'There is only one thing in the world I want,' he said. 'I want to go to West Point.' So Haig Shekerjian graduated from the Academy, and served with distinction in both world wars.

"When I told him about our Armenian DPs, he set aside his own plans and became director of ANCHA. By the end of 1947 he had established headquarters in Stuttgart and was distributing aid to the stricken people."

General Shekerjian, having completed his work in Europe, now resides in San Francisco.

ALLIED IN DEFENSE

(Continued from page 21)

coking. In that year, however, General developed a method of "fixation" of nitrogen from the air and in 1917 was about to build a plant on a commercial scale when the Government expressed its own interest. General offered the process without charge for the duration and a plant was completed, although the war ended before it could be operated.

In 1919 General joined with Semet-Solvay and Solvay Process in organizing the Atmospheric Nitrogen Corporation to develop the process for fixing nitrogen and producing synthetic ammonia.

An experimental plant at Syracuse became the pioneer forerunner of a huge plant at Hopewell, Virginia, believed to be the largest of its kind in the world, at least this side of the Iron Curtain. It went on stream in 1928. Allied assured an adequate, uninterrupted supply of this vital chemical, which had come so much into demand by farmers. The United States was made independent of foreign producers.

From these roots, the Nitrogen Division was formed in 1952, and is continuing to develop and produce many related lines of chemicals.

* * *

FOLLOWING THE ARMISTICE, the American chemical industry was faced with the problems of equating an expanded capacity to peacetime economy. Integration was badly needed by a scattered industry. In 1920, a committee met for the purpose of consolidating an important segment of the chemical industry, consisting initially of these five major producers:

The Barrett Company, General Chemical Company, National Aniline & Chemical Company, Semet-Solvay Company, and the Solvay Process Company. The new name was Allied Chemical & Dye Corporation.

The *New York Herald* said about the merger: "The need for a strong, self-sustaining chemical industry in peacetime and an instrument ready for immediate conversion to defensive purposes in war, has been achieved by the consolidation. We hail it as a victory . . ."

Allied was busy upgrading its basic line of acids, alkalis, ammonia and coal-tar products, expanding its dyes, food colors and pharmaceuticals, and introducing various nitrogen solutions to the fertilizer industry. In the early 30's, the Company pioneered in the manufacture of synthetic detergents, then received as revolutionary "soapless soaps."

By 1934, General Chemical was embarked on an ambitious program of expanding its laboratory chemicals, the kind that had been, for the most part, imported. Today, industrial research laboratories rely on Allied chemicals.

If modern America needed chemicals for positive uses —to help produce or grow items—there was also a developing demand for certain "negative" chemicals. These include insecticides, fungicides, and herbicides.

From time immemorial, man had been fighting a losing battle with the insect world. They ate up his crops and made life generally unpleasant in the summer. But a big advance was noted in 1938 when Allied introduced one of the first synthetic organic insecticides. This opened up new vistas for many products for controlling small and microscopic pests.

At the same time, Semet-Solvay and Barrett were also improving by-product coke oven methods. New applications, developed by Barrett, advanced coal chemistry and heralded a rich harvest of coal-based products. They included plastics, pharmaceuticals, dyes, disinfectants and solvents.

WHEN WORLD WAR II started, Allied Chemical was prepared, along with other members of the industry, to bulwark the nation's defenses in many scientific lines. Allied's production of basic chemicals and its research facilities were particularly well adapted for the emergency. The Hopewell nitrogen plant, for example, was expanded to turn out ammonia for explosives manufacture.

During the war, Allied built and operated two other ammonia plants for the Government at Henderson, Kentucky, and South Point, Ohio. The Company's nitrogen organization designed and engineered these plants, trained the personnel and donated inventions, secret processes and practical knowledge.

General Chemical converted seven of its contact sulfuric acid plants to manufacture oleum for high explosives, and designed, built and operated 11 new sulfuric plants. At the same time, General was producing in existing plants the acid necessary to keep many industries functioning.

Allied also operated a TNT plant at Point Pleasant, West Virginia, and assigned over 250 of its own employees to the project. Despite initial unfamiliarity with the processes, the plant was soon operating at well over 150% of rated capacity, and turning out 45 million pounds a month, the largest quantity of the explosive ever produced at any one location up to that time. The per pound cost was less than half of the average cost of all the TNT manufactured by the 11 ordnance plants in the country.

In addition to producing dyes for military clothing, National Aniline developed a synthetic detergent useful as a salt water soap for the Navy. An all-purpose soap was developed at the same time for the Army which could be used in any kind of water. By increasing the production of detergents, not requiring short-supply fats and oils in their manufacture, Allied had supplied a remedy for this severe shortage.

Allied also conducted research in anti-malarial remedies and developed a substitute for the quinine blocked in the Far East. Polymerization of synthetic rubber, colors for smoke bombs, and special tablets to purify drinking water were among other high points of Allied's war work and research.

Coke oven plants were expanded and more than 700 by-product ovens built for steel and chemical companies. A plant to manufacture the explosive, ammonium picrate, was built at Baldwinsville, N.Y., and a material synthesized for the short-supply phenol previously required.

Allied Chemical formulated a process to manufacture a component for aviation gasoline, did research work on a new method of producing picric acid, on ingredients to protect against gas attack, and on many other priority materials.

The Company's research personnel also developed anhydrous hydrofluoric acid required in the manufacture of aviation gasoline; fluoboric acid and fluoborates for casting magnesium metal; methods of using domestic sources of aluminum-bearing clay to replace the bauxite required for aluminum production, and in countless other ways worked to provide technical assistance in the normal production of coal-tar chemicals and enamels, light oils, road materials, pipeline coatings . . . a list of products which stretched almost endlessly.

* * *

THE CHEMICAL INDUSTRY was in its infant stages in 1920, the year the Allied was formed. Since then Allied has grown with the general advance of chemistry

by consistently reinvesting from its annual income. Today, sales have risen to over $625 million.

Since World War II, Allied Chemical has continued to expand its facilities for basic products and has also inaugurated entirely new projects stemming from its research:

A low-molecular-weight wax made from inexpensive oil stocks is being manufactured at Buffalo and a new nylon fiber, "Caprolan," is being produced in a $30 million plant in Chesterfield, Va.

Another Division has erected a plant for the production of a new process phenol, one of the raw materials from which Caprolan is made.

In 1953 Allied purchased from Libbey-Owens-Ford its Plaskon Division, to round out and add to the Company's line of plastic products.

The Mutual Chemical Division, the seventh major Division established by Allied, is the country's largest producer of chromium chemicals, which are used in leather tanning, soap manufacture, textile dyeing and wood preserving.

Highlights of other new or expanding activities include plants to make phthalic anhydride, a product which goes into the alkyd resins used as protective coatings for automobiles; niacin, the vitamin B complex; aluminum sulfate for water purification; ethylene chemicals, components of permanent type antifreezes; fluorinated hydrocarbons, the versatile inert gases which put the "push" into aerosol bombs; adipic acid, an intermediate in the manufacture of plastics, synthetic rubber and jet engine lubricants; high-analysis mixed fertilizers; urea-formaldehyde; mercury cell chlorine and caustic facilities; hydrogen peroxide and many other projects.

Our national prosperity is supported by contributions which Allied and other chemical companies are making in the form of continuing research and the introduction of new products. Without recent and continuing chemical developments, in which Allied has played a part, our national defense would be immeasurably weaker.

The Company is dedicated to continuing progress to keep pace with and anticipate the needs of America in war and peace.

NEW YORK RESERVES AT A.C.C.

ARMY CHEMICAL CENTER, MD.—Forty-four reserve officers, members of the New York Military District, were conducted on a three-day training tour of the facilities of this installation over the weekend, Nov. 16-18.

All members of the group are assigned to Chemical Corps Mobilization Designation Detachment No. 10, Brig. General Theodore H. Marshall headed the group, all of whom in civilian life are connected with industry.

Arriving here Friday, Nov. 16, the group was briefed by Brig. General Marshall Stubbs, commander of this post and Headquarters, Chemical Corps Materiel Command. The Chlorine plant here, operated under lease by the Diamond Alkali Company, was a point of particular interest to the group.

In picture above, left to right, are: Colonel William C. Hammond, Deputy First Army Chemical Officer; Brig. General Marshall, commander of the reserve group; and Brig. General Stubbs.

U.S. ARMY ADJUSTS TO NUCLEAR AGE

(Continued from page 25)

"Because this great United States Army is on constant guard throughout our country and at outposts in all parts of the world, ready to go into effective action in defense of the Nation, the citizens of America can face each day with greater confidence. The Army is not something far removed from the people. Despite its atomic weapons, guided missiles, tanks and all the rest of its stupendous equipment, it is as much a part of every American community as the policeman on the beat. It is a national fire brigade—ready if the bell rings. It is made up of the sons and daughters of hundreds of thousands of American homes. It touches every aspect of American life. In the final analysis every American bears a share of the responsibility for the Army's success in carrying out its mission, for it draws its vitality from the imperishable strength and solid support of the American people. . . ."

Lt. General Walter L. Weible, Deputy Chief of Staff, and last year's President of the Association, presided at the various sessions.

The meeting marked a change in the scope and character of the Association. Previously, largely a strictly professional group, it has undergone change to broaden materially its scope, with a view to increasing civilian interest and membership. In line with this, the previous practice of having active-duty personnel as officers of the Association has been discontinued.

The new President of the Association, who in recent years has appeared at various A.F.C.A. programs, is Mr. John Slezak, an Illinois industrialist and formerly Under Secretary of the Army. Mr. Willard F. Rockwell, of Pittsburgh, is the new Chairman of the Council of Trustees. The new Vice Presidents are: Maj. General Leif J. Sverdrup and General Matthew B. Ridgway, retired.

The 96-page, December 1956 issue of the Association's magazine, "ARMY," is devoted almost entirely to reports on this outstanding program. Additional copies may possibly still be available by writing to the "Association of the U.S. Army, 1529 Eighteenth Street, N.W., Washington, D.C." All of the speeches are well worth reading and study.

FORT DETRICK APPRECIATION WEEK

By Joseph F. Eisenhauer, 3d

Executive Secretary—City of Frederick, Md.

U.S. Army Photo

Col. John J. Hayes, Fort Detrick Commander, receiving plaque given by citizens of Frederick, Maryland, in honor of personnel of Fort Detrick at banquet concluding "Fort Detrick Appreciation Week." Picture shows some of the head-table group. Left to Right: The Honorable Clifford C. Furnas, Assistant Secretary of Defense; Mr. Russell H. McCain, Executive Assistant to Governor McKeldin of Maryland; Mr. William Hardy, Chairman of the Appreciation Week Committee; Colonel Hayes, and Judge Charles A. Moylan, of Baltimore.

On the evening of Thursday, October 18, 1956, some six hundred civilians gathered at the banquet table in the Maryland National Guard Armory at Frederick, Maryland, to pay tribute to the military and civilian personnel of Fort Detrick.

It was the community's manifestation of gratitude to Fort Detrick, the Army Chemical Corps' Biological Laboratories, commanded by Colonel John J. Hayes.

The event climaxed a week-long observance, October 14-20, formally designated as "Fort Detrick Appreciation Week." It was a spontaneous recognition by local business and professional leaders and civilian officials of the benefits mutually accrued.

The project was sponsored by the Frederick Chamber of Commerce, itself the first charter member of the United States C. of C. Wholehearted support was immediately tendered by City, County and State. Proclamations were issued, Frederick's merchants offered special inducements, shop windows carried displays, street banners were hung, there was a special newspaper edition, and other steps were taken to focus public attention upon the fact that Fort Detrick's military and civilian personnel were in the forefront of community endeavor. Radio Station WFMD, covering four states, carried the three-hour banquet program.

The community's feelings were succinctly described on the plaque presented to and accepted by Colonel Hayes as Commanding Officer. It stated:

"The Frederick Chamber of Commerce, Inc., First Charter Member of the U.S. Chamber, Is Pleased To Present This Tribute to the Military And Civilian Personnel of Fort Detrick, In recognition of their thirteen years of loyal, devoted and untiring efforts in behalf of the economic, civic, social and general welfare of Frederick County,—and to express the sincere appreciation of the citizenry of Frederick City and County, for the privilege and pleasure of having the personnel of this fine Installation as a part of our way of life."

The plaque was signed by Donald B. Rice, President of the Chamber of Commerce; John A. Derr, Mayor of Frederick; and Delbert S. Null, President of the Board of County Commissioners.

In special editions, the Frederick News-Post, morning and afternoon, featured an editorial, which stated:

"No one knows better than we of the Frederick News-Post the extent to which Fort Detrick and its staff have become thoroughly integrated in our way of life—and to community advantage."

Statewide recognition was given by Maryland's Governor Theodore R. McKeldin, who issued an official proclamation. (See facsimile on opposite page.)

The attitude of the community's broad economic segments was well summarized by the Monocacy Valley Association (Manufacturers) in a paid advertisement which stated:

"Fort Detrick is important among military posts. The work they do is particularly significant. Its personnel are dedicated servants of our Republic and they are our friends and neighbors."

The principal civilian speaker at the banquet was Judge Charles A. Moylan, of the Baltimore Supreme Bench, a native of Frederick County. Military speakers were Dr. Clifford C. Furnas, Assistant Secretary of Defense, for Research and Development, and Major General William M. Creasy, Chief Chemical Officer, Department of the Army.

Russell H. McCain, of Frederick, Special Assistant to Governor McKeldin, acted as Toastmaster. Distinguished military guests introduced included: Major General L. D. Carter, Special Assistant to the Commanding General of the Second Army; Major General G. S. Meloy, Chief of Information, Department of the Army; Brigadier General J. H. Rothschild, Commanding General of Research and Development Command of the Chemical Corps; Lt. Colonel J. A. Hebbeler, Special Representative of the Chief of Research and Development, Department of the Army.

Local leaders in all walks of life feel the epitome of community relations has been reached in Frederick. Colonel Hayes and his military and civilian coworkers have cemented a firm bond of friendship in the civic, fraternal, religious, industrial and business life of the area. Scores of personnel from Fort Detrick have been and still are active in community affairs.

Above all is the fact that Colonel Hayes and his staff have been generous in their assistance in the planning of a Greater Frederick. Fort Detrick long ago adopted what might be termed a "Shop in Frederick" slogan. Monthly purchases average several hundreds of thousands of dollars.

The success of "Fort Detrick Appreciation Week" is attributed in large measure to two men who did much of the work involved. They are Joseph F. Rhoderick, Executive Manager of the Chamber of Commerce, and Joseph Schwimer, Fort Detrick Assistant for Public Affairs. Mr. Schwimer, on a previous assignment to Ft. Detrick on active duty as a Major, served as the Public Information officer.

The State of Maryland

Executive Department

GOVERNOR'S PROCLAMATION
"FORT DETRICK APPRECIATION WEEK"
October 14-20, 1956

WHEREAS the citizens of Frederick City and of Frederick County, acting through the Chamber of Commerce, have designated October 14-20, 1956, as "Fort Detrick Appreciation Week;" and

WHEREAS for a period of nearly a decade and a half, Fort Detrick has made an outstanding contribution to the economy of this fine area of our State; and

WHEREAS both the military and civilian personnel of the Fort have, over the years, assumed fully the many responsibilities of civic, religious and social obligations and have cooperated most generously in all matters of community interest and mutual benefit; and

WHEREAS under the capable administration of Colonel John J. Hayes, there has developed a common understanding and a clear appreciation of the various problems that must, of necessity, accrue in an area where such an installation as Fort Detrick is located.

NOW, THEREFORE, I, Theodore R. McKeldin, Governor, do join with the citizens of Frederick City and of Frederick County in expressing to Colonel John J. Hayes, and through him to all those associated with him in this most important activity of the Chemical Corps, my sincere thanks for and appreciation of the splendid accomplishments which motivated "FORT DETRICK APPRECIATION WEEK" on the part of our citizens.

GIVEN Under My Hand and the Great Seal of the State of Maryland, at the City of Annapolis, this 18th Day of October, in the Year of Our Lord, One Thousand Nine Hundred Fifty-six.

By the Governor

Secretary of State

It's actually easy to save—when you buy Series E Savings Bonds through the Payroll Savings Plan. Once you've signed up at your pay office, your saving is done *for you*. The Bonds you receive pay good interest—3% a year, compounded half-yearly when held to maturity. And the longer you hold them, the better your return. Even after maturity, they go on earning 10 years more. So hold on to your Bonds! Join Payroll Savings today—or buy Bonds where you bank.

The bride wore goggles

ON OCTOBER 26, 1912, an ungainly biplane swooped into a Michigan pasture like an overfed duck and promptly nosed over on its back. Its contents proved to be a teen-age couple who got married as soon as they regained consciousness.

This was the world's first aerial elopement.

Art Smith, the groom, happened to have one of the country's few flying machines because he had built it, with his own hands, at age 15. And his parents had mortgaged their home to finance him. Their pride helped carry him through years of failure to soaring success as a famous early stunt flyer.

But he didn't remain a barnstormer long. In 1917 his pioneering skill was needed to train our World War I pilots. Then came America's first air-mail service. And again, Art helped break the way—though it eventually cost him his life.

As American as Tom Swift, Art Smith was the farseeing and confident son of a country that has always produced far more than her share of sure-footed visionaries. That's a good thing to know, especially if you've been putting some money into this country's Savings Bonds.

U. S. Savings Bonds aren't backed by gold or silver alone. They are backed by the character and abilities of 165 million Americans. That's why they're one of the world's greatest investments. Buy them regularly—and hold on to them!

Safe as America—U.S. Savings Bonds

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TABLET UNVEILED

(Continued from page 14)

were privileged to serve under General Porter during World War II felt a reawakening pride in our Corps and our hero dead as General Porter's words recounted their sterling accomplishments. It was particularly fitting that the lofty buildings of lower Manhattan's business district across the channel should serve as a background for General Porter's speech, since it was from such civilian environs that many of the deceased came.

With a most attentive audience before him, General Porter spoke as follows:

"General Barth, Ladies and Gentlemen: It is good of you to come here today to join in this ceremony honoring the officers and men of the six Chemical battalions who made the supreme sacrifice while serving with the First Army during World War II. It was my privilege to serve as Chief of the Chemical Corps during that time.

"These were unusual men manning an unusual weapon.

"Mortar troops of the Chemical Warfare Service, little known in 1942, had been battle-tested by 1943, were veterans by 1944, and had become famous throughout the Army by 1945. These troops, equipped with the 4.2 inch Chemical mortar, possessed a weapon capable of delivering a greater weight of shell in relation to its own weight than any other weapon in the United States Army. It could deliver massed fire on short call and with its rifled barrel it possessed an accuracy of fire which approximated that of field artillery. With its high-angle fire, it could reach targets inaccessible to artillery. Its short minimum range made it possible to emplace it sufficiently near the front lines to give strong support to infantry units, and with its low silhouette it presented a difficult target to the enemy. On the basis of maximum capabilities, a massed battalion could fire 12 tons of shell on a target in one minute, move out, set up its mortars in new positions within six minutes, and a minute later repeat the operation with the same deadly precision. A well-trained gun crew could get 10 rounds in the air before the first one reached the target.

"So much for the weapon: now I would like to tell you a few things about the men, and particularly of the 81st, 86th, 87th, 90th, 92nd and 95th Mortar Battalions, all of whom from time to time served with the First Army.

"The Chemical Mortar men first proved their worth in Sicily and Italy and by D-Day in England we had two battalions, the 81st and 92nd, ready to cross with the infantry troops.

"On the 6th of June 1944, the 81st, commanded by Lt. Col. Thomas H. James, supported elements of the 1st and 29th Infantry Divisions on Omaha Beach. The LCT carrying the forward Battalion command group was heavily shelled when it approached the shore. Enemy artillery pierced the side of the ship, flooding the engine room and knocking out the rudder. Floating helplessly, the craft finally was carried by the current to the cover of a steep cliff. One non-commissioned officer was killed and Colonel James was seriously wounded during the shelling.

"Company A lost some of its equipment in the heavy seas, and its commander, Captain Thomas P. Moundres, was mortally wounded before reaching the beach.

"The four LCVP's carrying Company B couldn't find a route through the obstacles in their sector. Two of the craft were disabled by artillery fire while heading for another beach.

"Company D also lost its commander, Captain Philip J. Gaffney, when his landing craft struck a mine. For their heroic action on D-Day, six men of the 81st Battalion received the Distinguished Service Cross, the Nation's second highest award for valor.

"Lt. Col. James H. Batte led the 87th Battalion in the D-Day support of units of the 4th Division. The battalion set up positions on the beach and fired at enemy targets. For almost 6 hours the 4.2 inch mortars were the only ground weapons capable of delivering heavy fire support.

"For their heroic action on D-Day, both the 81st and 87th Battalions won the coveted Distinguished Unit Citation.

"Four other Chemical Mortar battalions supported the First United States Army in World War II. Early in July, among the hedgerows of Normandy, the 86th and 92nd Battalions were committed to battle. The 92nd, commanded by Lt. Col. Ronald L. Martin, had been activated in England, one of the four mortar battalions which were activated overseas during World War II. The 92nd supported the 35th Infantry Division in the Battle of St. Lo. In a divisional attack on Hill 122 before the town, the battalion expended 7,000 rounds during a continuous 14-hour assault on the German-held hedgerows.

"The 90th Battalion, Lt. Col. Edgar V. H. Bell commanding, was not formed until February 10, 1944 and did not arrive overseas until the following November. (Col. Bell, by the way, also commanded the 2nd Chemical Mortar Battalion in Korea). The 90th was assigned to First Army from January 12 to April 18, 1945. On March 8, the day after the Ludendorf Bridge at Remagen was taken by U.S. troops, elements of the battalion, attached to the 9th Infantry Division, crossed to the eastern bank of the Rhine to provide close support for the infantry elements across the river.

"The 95th Chemical Mortar Battalion, activated in April 1944, saw limited action during the last few months of the war. Its commander was Lt. Col. Earl L. Shepherd.

"These six mortar battalions served with distinction, earning four Distinguished Unit citations and four foreign unit-citations. During their assignment to the First United States Army the units fired over 350,000 rounds of 'HE' and 'WP' ammunition and suffered numerous casualties. The marvelous record of the Chemical Mortar battalions in World War II provides the Chemical Corps with some of the brightest pages of its history.

"By the end of the war, Chemical Mortar battalions had fought in every theatre, supported every type of ground troops and had seen extended services in the most bitterly contended actions of the war.

"Also, on the basis of 'Days in Line' in relation to total time in the theatres, these battalions made a record which is exceeded by few, if any, other organizations in the Armed Forces.

"It is a great compliment to the men and to their weapon that it has now been adopted for general use in Infantry Mortar companies.

"And as we, the remaining and ever grateful members of the New York Chapter honor these heroes of the Chemical Corps, I am mindful of the words Coleridge, the poet, used:

> 'THEIR BONES ARE DUST,
> THEIR SWORDS RUST,
> THEIR SOULS ARE WITH THE SAINTS
> . . . WE TRUST.'"

Following General Porter's wartime recollections of the accomplishments of the mortar battalions, Brig. General William R. Currie, Asst. Chief Chemical Officer for Plans and Doctrine, conveyed to the group the appreciation of Maj. General William M. Creasy for their recognition of the contribution of these Chemical Corps

heroes and for the generosity of the Chapter in raising the funds for the memorial.

The formal presentation of the bronze memorial was made by Mr. W. Ward Jackson of the Commercial Solvents Corp., president of the New York Chapter of the Armed Forces Chemical Association. Mr. Jackson stated that the New York Chapter was happy and honored to participate in this ceremony. It served as another opportunity to demonstrate the objectives of the Armed Forces Chemical Association in perpetuating the close friendships, memories and traditions growing out of service by the military and civilians in the defense of our country.

The actual unveiling of the memorial was a very impressive event. As the crack First Army Honor Guard smartly executed "Present Arms" and the clear notes of taps rolled across New York harbor, Colonel Thomas H. James (Ret.), commanding officer of the 81st Chemical Mortar Battalion on D-Day drew aside the cover from the monument.

Maj. General G. B. Barth, Deputy Commanding General, First Army, accepted the plaque on behalf of the First Army. Briefly he recalled the splendid support he received from the 87th and 92nd Chemical Mortar Battalions while they were attached to his division. Their battlefield accomplishments, he stated, were in the finest tradition of our Army and declared that our nation's freedom today is a continuing proof that their honored dead did not die in vain. General Barth also complimented the members of the New York Chapter for perpetuating in bronze and granite memories of their comrades-in-arms.

Benediction was given by Chaplain (Capt.) Father Brady of Fort Jay. The playing of the National Anthem concluded the presentation ceremony. The group then crossed the drill field where a formal Retreat Parade was conducted in their honor. The New York Chapter then played host at dinner in the Officers Mess to their members.

Among those attending were:

Major General William N. Porter, Chemical Corps, USA (Ret.); Major General G. B. Barth, Deputy Commanding General, First Army; Major General Robert H. Booth, Chief of Staff, First Army; Brigadier General William R. Currie, Asst. Chief Chemical Officer; Colonels Harold Walmsley, New York Chemical Procurement District; Theodore P. Gahan, Chemical Officer, Headquarters, First Army; William C. Hammond, Jr., Deputy Chemical Officer, Hqs., First Army; J. E. Maloney, Deputy Post Commander, Ft. Jay, N.Y.; Thomas James, USA-Ret. (CO 81st Mortar Bn. on D-Day); Frank McGuane, Commanding Officer, 464 Chemical Group (USAR); Majors Charles H. Barclay, Chief Chemical Supply Div. Hqs., First Army; Theodore J. Huxford, Chief, Chemical Operations Div., Hqs., First Army; Capt. A. C. Huggard, Chief Chemical Reserve Forces Division, Hqs., First Army—and

Messrs. Simon Askin, President Hayden Chemical Corp; A. N. Balvassari; J. F. Barnes; Ed Bohle, Jefferson Chemical Co.; Col. A. N. Bowes (Ret.); Messrs. H. J. Bonyun, VP Publicker Chemical Co.; Charles Brinkerhoff; Nicholas E. Byrne; Col. Roy Charron (Ret.), U.S. Envelope Co.; Mr. Raymond Carey; Miss Mary Nell Conboy; Col. Alfred C. Day (Ret.); Mr. James Day, Dow Chemical Co.; Mr. and Mrs. R. W. Eddy, Carbide & Carbon Corp.; Mr. Robert Eastman; and

Mr. and Mrs. H. M. Fisher, Commercial Solvents Corp.; Mr. and Mrs. L. J. Fentiman; Messrs. David Gordon; James Harris; Claude Harvey; Joel Henry; Mr. and Mrs. W. Ward Jackson, V.P. Commercial Solvents Corp.; Messrs. Jacob K. Javits, Attorney General, New York State; J. Keneally, Carbide & Carbon Corp.; Dr. D. D. Keyes; Messrs. P. F. Kinsley; William Lacey; A. W. Luedeke; John R. Maloney; F. E. Maple, Commercial Solvents Corp.; E. V. Marlier; Brig. Gen. Theodore H. Marshall (USAR), Lederle Laboratories; Messrs. James McInnes; James McManus; R. C. Milano, President, Millmaster Chemical Corp.; Howard Milieus; Arthur Moss; Larry Munn; John E. Newman; P. R. Rector; Lloyd L. Schrader; James E. Shand; P. R. Smith, Gen. Mgr. Commercial Solvents Corp.; Chaplain Stevens; and—

Major and Mrs. Strom; Messrs. Walter Sykes; John Thoren; J. L. Tichner; Robert Tritisch; Dr. Jesse Werner; Messrs. Charles Westenberg; A. A. Williams and James H. Worth.

A. DePHILLIPS HEADS BALTIMORE CHAPTER

The annual election meeting and dinner of the Baltimore Chapter, A.F.C.A., was held on September 25 in the Southern Hotel, Baltimore. Highlighting the evening's entertainment was the showing of color slides by Mr. Howard B. Owens, science teacher of Northwestern High School, Hyattsville, Md. Mr. Owens was the winner in 1956 of A.F.C.A.'s $1,000 award for outstanding success as a science teacher at the high school level. The slides depicted some of the science teaching methods employed by Mr. Owens and the school to maintain a high degree of interest among the students in the science studies. Scenes of the prize-winning exhibits previously shown at science fairs and other public functions were among the views presented.

Immediately prior to this showing and following election of new officers, Mr. O. J. Theobald, retiring chapter president, presented Mr. Owens with the A.F.C.A. scroll of award recently won by him when chosen the "Outstanding secondary school science teacher" from competition throughout the U.S.

Principal speaker of the evening was Dr. Thomas G. Pullen, Jr., Director, Maryland State Board of Education, who spoke on "Conflicting Opinions in Respect to the Training of Scientists and Engineers." Dr. Pullen stressed the need for both scientists and engineers in the highly specialized world of today and warned that the one main obstacle to training these specialists is the low pay rate offered teachers and professors.

The following slate of proposed new officers was presented by the nominating committee and installed by unanimous vote of the membership:

Mr. A. DePhillips, President (Diamond Alkali Co.) replacing Mr. O. J. Theobald (Olin Mathieson); Mr. Robert H. Hermann, Exec. Vice President (Davison Chemical Co.); Mr. R. H. Turk, 3rd Vice President for Industrial Relations (Pemco Corp.); Mr. G. L. Cole, Vice President for Programs (Chemical Corps Materiel Command); Capt. W. C. Norris, Vice President for Publicity (Army Chemical Center); Mr. W. H. Sheltmire, Vice President for Membership (Olin Mathieson). Mr. R. S. Bailleul (Chemical Corps Materiel Command) was reelected Secretary-Treasurer.

Mr. O. J. Theobald, retiring president of Baltimore Chapter, presents a certificate of recognition to Mr. Howard B. Owens, of Hyattsville, Md., who, in 1956, was selected as A.F.C.A.'s "outstanding science teacher of the year."

—U.S. Army photo

CHEMICAL CORPS NEWS

FOR GALLANTRY IN KOREA

ARMY CHEMICAL CENTER, MD.—Captain William J. Cribb, Jr., Chemical Corps, currently a graduate student in Industrial Management at the University of Maryland, was decorated with the Silver Star Medal (first Oak Leaf Cluster) and the Bronze Star Medal by Brig. General Marshall Stubbs, post commander, at a review here on September 22. Previously awarded the Silver Star, Combat Infantry Badge and Purple Heart, for services with the 25th Division in Korea, the citation for gallantry which carried the new Silver Star Award states he "organized friendly forces, directed mortar and machine-gun fire on the enemy and finally, led a determined counterattack, repelling an enemy breakthrough of friendly lines and killing or wounding about one hundred of the enemy."

PROMOTION AT PINE BLUFF

Commended for excellent services as Post Veterinarian in charge of food inspection at Pine Bluff Arsenal, Arkansas, Specialist First Class Lowell Foster recently was promoted to the grade of Master Sergeant. Master Sergeant Foster's 11½ years service includes duty in Korea as First Sergeant of the 150th Medical Detachment Hospital unit for war dogs. He resides at Pine Bluff with his wife and three sons and plans continuing his career in the Army. His home town is Niles, Michigan.

NEW C.O. AT PINE BLUFF

Colonel Russell W. Dodds assumed command of Pine Bluff Arsenal, Arkansas, on October 22, 1956, replacing Colonel William H. Greene. Colonel Dodds has recently been the Inspector General for the Chemical Corps. A native of South Dakota, Colonel Dodds has a Bachelor of Science degree from South Dakota State College. He entered the South Dakota National Guard in March 1923, completed 1 year graduate study at University of Minnesota and was commissioned a second lieutenant in 1924.

During World War II Colonel Dodds served as chemical officer, 65th Infantry Division, in the European Theater of Operations. In July 1945, he was reassigned as chemical officer of the 9th Infantry Division, and later was appointed as assistant Inspector General of the Third Army. He returned to the United States in July 1948.

INVENT HYPO NEEDLE STERILIZER

—U.S. Army photo

FORT DETRICK, FREDERICK, MD.—Army Chemical Corps employes Earl F. Oden (center) and Douglas Crockett show Nurse Betty L. Grabill, also a Fort Detrick employe, how to operate their recent invention, a device to keep hypodermic needles sterile and ready for instant use.

ROCKY MOUNTAIN AWARD WINNERS

—U.S. Army photo

Left to Right: Mr. John P. O'Hehir, Mrs. Connie Martin, Miss Margaret Horvat, Colonel Donald Grothaus, arsenal commander, and Miss Avis J. Hinchman.

In recent ceremonies at Rocky Mountain Arsenal, Colorado, five government employees received a total of $1,200 in cash awards from Col. Donald G. Grothaus, commanding officer.

Mr. John P. O'Hehir was presented $300 for his "sustained performance" (6 months or more) as Comptroller

of the arsenal, being cited especially for efficiency in respect to administration of the Armed Forces Industrial Fund.

Miss Avis J. Hinchman received $200 for outstanding work with the arsenal's Board of U.S. Civil Service Examiners.

Miss Margaret M. Hovat was cited with a $200 award for her superior performance in maintaining civilian personnel records.

Mrs. Connie Martin's $200 award was for her thoroughness in processing claims covering industrial cases of injured employees.

Mr. L. B. Owen, in his capacity as Supervisory Procurement Officer, was awarded $300 for his "sustained performance" in contracting work.

SUGGESTION WINS LARGEST AWARD

—U.S. Army Photo.

Irving L. Kinsey, of Facilities Division, Army Chemical Corps Biological Warfare Laboratories, Fort Detrick, Maryland, has received a check for $365, the largest award approved at that installation. The award was for his proposal to eliminate the use of caustic soda in the sewage system, resulting, according to a Detrick announcement, in total annual savings of $26,706.00. Efficiency of the sewage disposal system was increased 10%, or in dollar parlance, $9,469.00; labor supply and steam costs of $13,992.00 are eliminated and reduction in use of the caustic itself results in savings in labor, supply and electricity of $3,125.50. Water savings amount to $120.00.

Attending the award ceremony at the division building were, left to right in picture above: Erle Elliott, Kinsey's immediate supervisor in the Decontamination branch; James F. Lawrence, Chief, Facilities Division; Colonel John J. Hayes, Commanding Officer; Mr. Kinsey; Gerald L. Huff, Assistant Chief, Facilities Division, and Roland L. Belden, Chief, Employe Utilization, Office of Civilian Personnel. Kinsey shifted credit for the award to Mr. Elliott, declaring: "If Mr. Elliott did not encourage me to submit the suggestion, I probably would have just gone ahead with the project as a routine job."

Colonel Hayes praised Kinsey and Elliott, saying: "These incentive awards come as the result of good thinking. That is what the Department of Army likes to see and hear about. This proposal is most gratifying."

HONOR GRADUATE OF CBR COURSE

FORT BENNING, GA.—Honor graduate of the first officers' class in the new expanded commanders' chemical-biological-radiological course at The Infantry Center's Chemical Section at Fort Benning is 1st Lt. James W. Hart, at left in picture below, of (429 Royal Oaks Drive), Nashville, Tenn., 10th Engineer Battalion, Third Infantry Division. Presenting the certificate is 1st Lt. Thomas C. Brown of Allendale, Fla., instructor at the Chemical Section. The class of 43 officers was graduated Nov. 2.

U.S. Army photo

VISITS OVERSEAS COMMANDS

EDGEWOOD, MD. — Colonel Claude J. Merrill, Deputy Commander of the Chemical Corps Materiel Command, with headquarters at Army Chemical Center, returned to the United States in September completing a 31-day Staff Technical Visit which took him more than 20,000 miles by air and to five overseas commands. Liaison visits of this type are conducted about once each year.

Colonel Merrill visited facilities in Alaska, where the Chemical Corps operates a "Cold Weather Testing Team" at Big Delta; the Hawaiian Chemical Depot at Hawaii, then flew to Japan where he visited the Japan Chemical Depot, and from there proceeded to Korea to visit the Korea Chemical Depot.

COL. FELLENZ NEW HEAD OF C.W. LABORATORIES

Colonel Lloyd E. Fellenz, West Point graduate and veteran of over 24 years active military service, has replaced Colonel Donald H. Hale (now retired) as Chief of the Chemical Warfare Laboratories. Colonel Fellenz has served with the War Plans Division, the Industrial Engineering Division and the Chemical Corps Board, in addition to having commanded a Chemical Group and served as Chemical Officer with the Continental Army Command, Fort Monroe, Virginia, prior to his recent arrival here. He has completed training at the National War College, The Infantry School, the Command and General Staff College and the Chemical Warfare School.

NEW ASST. COMMANDANT OF CHEMICAL CORPS SCHOOL

Colonel Cecil H. Wood, native of Boston, Mass., recently appointed Assistant Commandant of the Chemical Corps School at Ft. McClellan, Ala., has a doctor's degree in education from Columbia University, a master's degree from Boston University, and a bachelor of arts degree from Harvard College.

Colonel Wood has spent the entire 14 years of his active military duty in the educational field. He was commissioned in 1931 when employed as Assistant Superintendent of the New York Military Academy, Cornwall-on-Hudson, New York, but his active military career began in 1942 as an instructor in chemistry, electrical engineering, and mechanics at West Point. In 1946 Colonel Wood became Associate Professor of Physics and Chemistry at West Point. In 1953 he attended the Advanced Course of the Chemical Corps School. He was connected with the Armed Forces Special Weapons Project for periods in 1952 and 1955. Colonel Wood was president of the Fort McClellan chapter of the A.F.C.A. last year and is presently a Director-at-Large of the Association.

Col. Wood has had two theses published: "Determination of Molecular Spectrum of Hydrogen" (1930), and "The General Educational Movement and the West Point Curriculum" (1950).

DANC, SLURRY AND DRY MIX

By LT. PAUL CARLETON, USN

Now listen to me, all you CBR guys
And I'll tell you of three mixtures that can save many lives.
When the enemy plasters you, both front and rear
With blistering agents I know you don't fear
For you know you'll be safe when you hear the alarm,
Take cover and mask, and you'll suffer no harm.

But after the attack and the shelling is done,
For you boys the work's just begun.
Cause the stuff you've been using don't just drift away,
It'll foul up your area for many a day.
So crawl from your cover, draw the gear that you rate
And organize your gang to decontaminate.

To clean up the places blister gas is the thickest
The Army has found that the best and the quickest
Are Chemical Corps compounds, quite easy to fix,
Named "DANC," "WET SLURRY," and also "DRY MIX."
DANC is a liquid that really will settle
The fate of a blister agent found on metal.

To decon a truck, a weapon or tank
Get out the handpumper and spray down with DANC.
Remember that DANC is corrosive as hell,
Masks must be worn and gloves as well.
When DANC is dried on, with water you flush
And treat the bare metal with a good oily slush.

To neutralize terrain where H and L stick,
A two-to-three dry mix will accomplish the trick.
Two shovels of bleach to three of dry sand,
Raked into the soil decontaminates land.
If you have no sand, well—sawdust will do,
Just test and make sure it's safe when you're through.

When buildings or structures must be cleared in a hurry,
Mix up a bath of gooey old slurry.
Fourteen quarts of water to six shovels of powder,
Makes a mix that is thicker than New England fish chowder.
Apply at the top and work down to the ground,
When your job is finished, no gas will be found.

Contaminated roads and air strips are stumpers,
But a cinch if you use 400-gallon pumpers.
For you can use slurry in the form of a spray,
And decon runways in the space of a day.

That's it, boys! Now, you all have the word,
Any one of these mixes will "cut the mustard."
DANC for metals, for weapons and tanks,
SLURRY for smooth surfaces, buildings and planks.
DRY MIX is the stuff you use where the grass is,
Splashed and oily with blister gases.
And when you think you're finished, be sure
To test—to make certain the areas are pure.

These lines were written by Lieutenant Paul Carleton, USN, of the U.S. Naval Station, Trinidad, British West Indies, while a student at the Panama Area Damage Control School. The poem was submitted by Colonel G. R. Oglesby (now retired), while serving as Chemical Officer, U.S. Army Caribbean, and Commandant of the School. Colonel Oglesby said the poem covered the subject so well that the School decided to use it in course on decontamination.—Ed.

DUGWAY TROOPS TWICE CALLED TO FIGHT FIRES

DUGWAY PROVING GROUND, UTAH—Members of the 2nd Chemical Weapons Battalion here again played the role of "fireman" when they were called upon for the second time last year to help extinguish blazes that threatened Utah's timber land. The aid was given on September 19 and 20 when flames spread throughout the dry forests of Coon Peak on Mount Vision, some fifteen miles southwest of Salt Lake City.

After receiving an emergency call for assistance, Colonel Pyueng S. Pyuen, Deputy Post Commander, directed Major Raymond Dale, Troop Commander, to form a fire fighting unit immediately. Thirty soldiers from Company "C" of the Battalion under Captain Edwin Gillespie, company commander; Lt. Gordon Kemp, platoon leader; and Captain Richard Powers, Dugway Provost Marshal, left in Army convoy for the area shortly afterwards.

After 21 hours continuous duty the men of Company "C" were relieved by a detail of 15 men from "B" Company under Lt. John Beebe. They remained at Mt. Vision until 6:30 p.m. on the 20th.

On July 12 a fire fighting crew from Company "B" stopped a brush fire on the southwest fringe of the Wasatch National Forest.

DR. BORUM JOINS R&D DIVISION

Dr. Olin Henry Borum (Ph.D., '49, University of North Carolina) has been appointed assistant to the Chief of Research Division, R&D Command, in the Chief Chemical Officer's Office in Washington, D.C. During World War II Dr. Borum was an officer in the Chemical Warfar Service, where his language proficiency in German, French, Spanish, and Portuguese was a valuable asset in his work with military intelligence. Since May 1951 he has been on active duty (last service as Major) in the Air Force on technical assignments, including two years as assistant professor of chemistry at West Point.

EDGEWOOD SAFE DRIVING PROGRAM

—U.S. Army photo

Left to right: Captain John C. Wall, assistant director of personnel and administration; Mr. William H. English, post safety officer; General Stubbs; Colonel Walter L. Maclachlan, deputy post commander; Major Meade B. Norman, provost marshal; and Sergeant James A. Bridges.

EDGEWOOD, MD.—In an endeavor to make post personnel safety conscious and assist in cutting down the rate of traffic accidents throughout the nation, Brigadier General Marshall Stubbs, post commander, proclaimed a special six-week safety period at the Army Chemical Center, Nov. 15, 1956-Jan. 2, 1957. The post safety officer, Mr. William H. English, devised a five-point program for the period as follows:

(1) All personnel to be made aware of the hazards in winter driving; (2) Use of posters and placards to emphasize the "Safe Driving" theme; (3) Showing of two films to post personnel—"Death on the Highway" and "Don't Skid Yourself"; (4) Wives and parents of servicemen taking holiday leaves be sent letters urging them to help insure soldier's safe return to duty, by promoting early departures for the return trip to the post; (5) The award, during each week of the period, of one of the six pens used by General Stubbs in signing the proclamation, together with a letter of commendation to the person "tagged" that week by Post Military Police for safe driving.

ONE-SHOT PORTABLE FLAME THROWER

A one-shot portable flame thrower is now in the final stage of development by the Army Chemical Corps. The unit was designed for use in close-range combat situations and is considered particularly useful for reduction of bunkers and other emplaced positions where high explosives are not effective. When equipped with a remote-firing device, it is ideal for use in defensive situations.

The weight of the flame-thrower loaded is approximately one-third that of the currently standard multiple-shot portable flame thrower. The range is about the same. Although designed to be expendable, it can be recharged and used again. Equipped to be fired remotely, it functions with either thickened or unthickened fuel.

This new flame thrower was designed by the Aerojet General Corporation under a development contract with the Chemical Corps. Technical advice and engineering supervision were provided by Mr. Frank L. Gaus, the project engineer, and Mr. Dean M. Kone, the associate project engineer. Both are employees of the Chemical Corps.

TRIPARTITE CONFERENCE AT ARMY CHEMICAL CENTER

A Tripartite Toxicological Warfare Conference by the United States, United Kingdom and Canada, was held at the Army Chemical Center, Edgewood, Maryland, from October 29 to November 10.

Representatives of the three countries attending this eleventh such conference held technical discussions on research and development programs and other activities of mutual interest in the toxicological defense field.

The Conference chairman and senior United States representative was Brigadier General J. H. Rothschild, Commander, Research and Development Command, Army Chemical Corps. The United Kingdom delegation was headed by Mr. A. E. Childs, Director, Chemical Defense Research and Development, Ministry of Supply, and the Canadian delegation by Dr. G. O. Langstroth, Chief Superintendent, Suffield Experimental Station, Defense Research Board.

The Army Chemical Center, commanded by Brigadier General Marshall Stubbs, was host to the conferees.

The opening meeting of the formal portion of this tripartite conference was held on November 5 in Washington, D.C., when the conferees were welcomed by Lieutenant General James M. Gavin, Chief of Research and Development, Department of the Army. Opening remarks were delivered by Major General William M. Creasy, Army Chief Chemical Officer.

The last tripartite conference on chemical, biological, and radiological defense subjects was held in Ottawa, Canada, in 1955.

SHOULDER SLEEVE INSIGNIA FOR CHEMICAL CORPS TRAINING COMMAND

Approved officially for Chemical Corps Training Command use. The shoulder insignia is described as follows: "On a cobalt blue lozenge with rounded corners, 2 inches in width and 3 inches in height, a torch surmounted by crossed retorts, all golden yellow."

COLORED SMOKE GRENADE

A small, pocket-size colored smoke grenade has been developed by the Army Chemical Corps especially for use by airborne troops. The new grenade weighs less than one and one-quarter pounds and is about the size and shape of a one-ounce tobacco can. It can be easily carried in the pockets of jackets or trousers. The parachutist can use this grenade to produce a signalling smoke to mark the location of aircraft to land or to deposit troops or cargo. The munition has been developed in five colors, green, red, violet, white and yellow, and more signal combinations are thus available than were provided by the M18, which is available in red, green, and yellow models only.